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LIPODYSTROPHIA PROGRESSIVA.*

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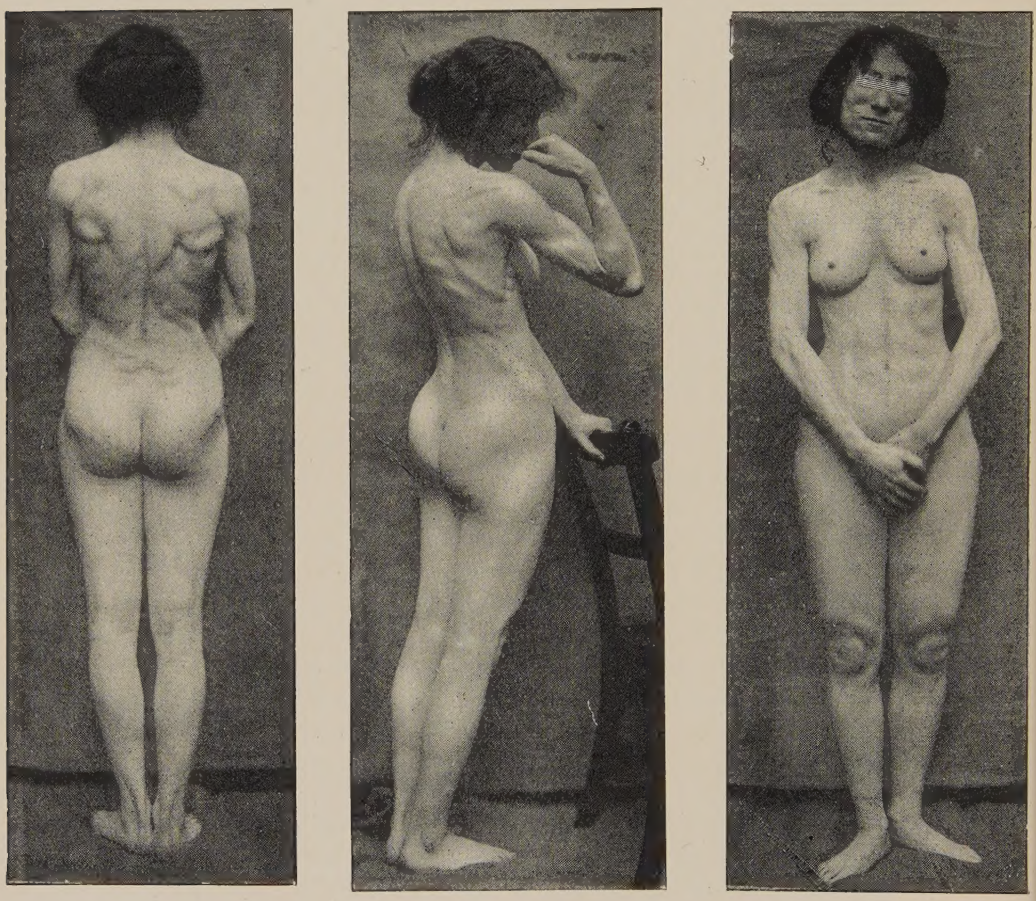
QUITE recently two genuine cases of lipodystrophia progressiva *in males* have been published. J. Gerstmann's case (33) is that of a soldier, aged 32 years, who, at the age of ten years, commenced to show symmetrical wasting of the subcutaneous fat in the face. Since then the fat-atrophy has gradually spread over the neck, upper extremities, and trunk, as far as the pelvic bones (the inguinal folds and the iliac crests). There is excessive amount of subcutaneous fat in the buttocks and lower extremities. The muscular development in the lean parts is very good. The man presents likewise signs suggestive of thyroidal disturbance, "facial irritability," alimentary glycosuria, and some nervous symptoms, which may, however, not be in any way related to the lipodystrophia. H. Gerhartz's case (34) is that of a man, aged 29 years, whose "lipodystrophia progressiva superior," as Gerhartz prefers to call it, commenced at the age of six years, after an accident on the ice, in which the patient nearly lost his life. In this case, however, there is no excessive accumulation of subcutaneous fat in the buttocks and lower extremities. The patient shows various other abnormalities ("facial irritability," hyperidrosis, alimentary glycosuria, etc.), the connection of which with the fat-atrophy is by no means clear.

* This paper was read at the Royal Society of Medicine, Section for the Study of Disease in Children, February the 23rd, 1917.

Lipodystrophia progressiva is a rare disease or morbid condition, which was at first supposed to be confined to the female sex. It is characterised by the progressive disappearance of the subcutaneous fat from the face and upper parts of the body. The term "lipodystrophia progressiva" was introduced by A. Simons (1911), and the



FIGS. 1–3.—To illustrate the typical changes in lipodystrophia progressiva.

appearance in his case, as portrayed in his and E. Holländer's illustrations (1910) may be accepted as altogether typical for the disease (1). Though Simons was undoubtedly the first to use the term "lipodystrophia" (from the Greek words λίπος, δυς-, and τροφή, signifying respectively *fat, badly,* and *nourishment*), a characteristic example of the disease was shown by Harry Campbell in 1907, at

the Clinical Society of London, under the heading "Disappearance, more or less complete, of the Subcutaneous Fat above the Region of the Lower Extremities" (2). By the kindness of Dr. Campbell I am able here to reproduce photographs of his patient taken in 1913 see Figs. 1–3).

The fat-atrophy seems first to attract attention in the face, and later on to spread to the trunk and upper extremities. In some cases the disease remains limited to the face and neck, or face, neck, and thorax; in Lewandowsky's case (11), although it had already lasted two years, it had not yet affected the upper extremities. Though the disease is called *progressive* lipodystrophia, it is really not progressive in all senses of the word, for the lower extremities and the buttocks are never involved; in most (nearly all) cases indeed, there seems to be an abnormal accumulation of subcutaneous fat in the thighs and gluteal regions (sometimes in the lower abdomen also), such as occurs in many females, especially at middle-age.* Moreover, when the subcutaneous fat has nearly all disappeared from the affected regions, the disease comes to a standstill. Although at the commencement there may have been associated neurotic or other troubles, when the disease once comes to a standstill, and sometimes during the progress of the disease, the general health appears to be in no wise affected by the lipodystrophia. The patients are ordinarily able to do as much work and stand as much fatigue as the average of normal women of the same age, or they may even excel in energy and strength. A cause of annoyance and trouble may be that employers and others, owing to the wasted appearance of the face, may suspect the presence of a disease of evil repute, such as pulmonary tuberculosis or cancer.

The ætiology of the disease is unknown, but an endocrinic origin has been suspected, that is to say, the peculiar fat-atrophy in question has been supposed to be a result of some disorder of the internal secretions. In women menstruation and the ordinary sexual functions appear to be unaffected. Feer (13) suggests dissorder in the function of the thyroid gland. Thyroid treatment and various drugs and other methods of treatment have been tried, but without any satisfactory result.

It is possible that the disease occurs relatively more frequently in women of Hebrew race than in others. In my first case the

* In females the predominance of subcutaneous fat about the thighs and gluteal regions is practically a secondary sex-character. The gluteal prominence is greatly exaggerated in some African races, constituting the racial peculiarity known as "steatopygia," which is illustrated by the pictures of the "Hottentot Venus."

patient was of Hebrew parentage, and so were Harry Campbell's and Herrman's patients. Several other patients, however, were certainly not Hebrew. If, moreover, the disease is slightly less rare amongst those of Hebrew origin than amongst others, it must, nevertheless, be exceedingly rare. During the whole time (more than twenty years) of my work as physician to the German Hospital in London (the in-patients and out-patients of which are largely Jews from Russia, Russian Poland, Germany, Austria, and the Balkan States) I have not met with a single case at that hospital, nor have I heard that any of my colleagues at the hospital have come across one.

In regard to the age at which the disease commences, and the circumstances (if any) which the patient or her friends suppose to have acted as exciting causes, there seems to be considerable difference in different cases ; but the disease is one of the first half of life, and generally commences in childhood, before puberty, especially at the age of six years or thereabouts.

In a case on which I published a note in 1911 (3), the patient, who was an unmarried woman, aged 27 years, of Hebrew parentage, presented no evidence of any visceral disease. She was said to have been a healthy girl up to the age of sixteen years, when menstruation commenced. Since then she had had various troubles, and had likewise been treated for dyspepsia and insomnia. But it is doubtful whether these troubles had anything to do with the lipodystrophia. She was active and discontented with life in her parents' home, being desirous of obtaining some useful occupation, which would render her more independent.

Since then I have met with another case, in a somewhat older woman, who, apart from the fat-atrophy in question, enjoys apparently perfect health. Mentally she is also normal, but is sometimes annoyed because people think that owing to the emaciated aspect of her face she must have "consumption." She is quite certain that the fat-atrophy commenced after an attack of measles, at 7 years of age, but it has long ago reached its maximum and is now quite non-progressive. I was not able to examine the trunk, but am assured that the atrophy is limited in this case to the face and neck, as in certain male patients referred to further on.

In Harry Campbell's case (2), when he first demonstrated it (1907), the patient was aged 21 years. Dr. Campbell kindly informs me that she is of Hebrew parentage. The fat-atrophy commenced at the age of six years and gradually progressed during the next eight years or so. The face was the first part affected. There was

abundant subcutaneous fat in the buttocks and lower extremities. Dr. Campbell tells me that cosmetically she has been greatly improved by paraffin injections into the subcutaneous tissues of the face, for the first time in 1914, and again about one year later (as the paraffin had apparently become gradually absorbed after the first injection).

The patient of Simons and Holländer (5) was aged 21 years when her case was described in 1910. The fat-atrophy was first noticed in the face, when she was eleven years old, and then gradually spread over the trunk and upper extremities. The leanness of the face, however, seems to have been preceded by excessive accumulation of fat in the gluteal region, for an increase in the size of that part of the body had attracted her mother's attention when she was only five years old. The appearance of her face was of special importance to her, as she was a professional dancer, and from the cosmetic point of view Holländer obtained a temporary good result by injecting a sterilised mixture of human fat and mutton suet into the subcutaneous tissue of her face. The good result, however, did not last long, for absorption soon took place. A "biopsy" examination of the affected skin and subcutaneous tissue was made in this case, and (unlike what is found at post-mortem examinations on even the most emaciated subjects of pulmonary tuberculosis) practically complete absence of fat was noted, so that only traces could be demonstrated by careful microscopical examination (6).

In a case which Sir William Osler kindly gave me permission to mention (7), and which doubtless belongs to the same class, the leanness was first noticed when the patient was about five years old, the face and back being the earliest parts to be affected. In 1895, at the age of ten years, when Sir William Osler saw her, the contrast was very great between the extreme thinness of the face, trunk, and upper extremities, and the plumpness of the parts below the hips. Menstruation commenced at twelve years of age. In February, 1913, information was obtained that, though this patient still looked thin and weak, she said that she felt well, and was actually stronger than most ordinary women.

In May, 1915, Dr. John Fawcett (4) kindly showed me a typical case of lipodystrophia progressiva in Guy's Hospital. The patient was a young English woman (not of Hebrew origin), aged about 19 years, with apparently nothing abnormal about her, physically or mentally, excepting the fat-atrophy. The subcutaneous fat of the whole body down to the pelvic bones was involved in the atrophy. The lower extremities showed a plentiful, but apparently not

excessive, covering of fat. The disease had been long quiescent, for it commenced at about eight-and-a-half years of age, and took only a year or so to reach its present stage. Menstruation, which commenced at thirteen-and-a-half years, was normal.

E. Feer, of Zurich, has recently described and illustrated two fresh cases of lipodystrophia progressiva (13). The patients were girls, aged 12 and 10 years respectively (1914), in whom the fat atrophy began at about six years of age in the face, spreading gradually to the neck, thorax, and arms. The increase of fat in the thighs and buttocks was more striking in the second case (that of Dr. Boissonnas, of Geneva), in which there was likewise abnormal obesity of the abdominal wall.

The case of "Segmentary Adiposis of the Lower Limbs," published by Laignel-Lavastine and Viard (9), must probably be regarded as belonging to the group we are now considering, though the emaciation of the face and upper part of the body was less decided. Their patient was an unmarried woman, aged 39 years, an embroideress, who complained of great enlargement of the lower extremities. This commenced, according to the patient's account, at the age of twenty-two years, and first involved the legs, then the thighs, and lastly the buttocks. Various methods of treatment had been resorted to (thyroid extract and iodine, milk diet, etc.), but without satisfactory results. The great size of her lower extremities offered a striking contrast to her thin chest and the general slenderness of the upper part of her body. The left thigh was decidedly larger than the right thigh, but both thighs, both buttocks, and both legs shared in the enlargement. The mammæ were very small. The thyroid gland was slightly enlarged. The menstrual periods, which had commenced at fourteen years of age, lasted only two days each time. At the Salpêtrière the patient had been given thyroid and ovarian extracts, but as yet without any effect on the size of the lower extremities.

I have been kindly allowed to refer to a case which may perhaps be regarded as an "incomplete form" of lipodystrophia progressiva, somewhat like the above-described one of Laignel-Lavastine and Viard. The case was shown by Edmund Cautley (29), at the meeting of the Harveian Society of London on February the 3rd, 1916, and in the discussion Leonard Guthrie suggested that it might be one of lipodystrophia progressiva. The patient was a woman, aged 24 years, whose lower extremities (excluding the feet) were remarkable for their excess of subcutaneous fat; so also was the lower part of the abdomen. The upper part of the body and face

appeared thin (at all events, by contrast). The increase in the size of the legs commenced at the age of six years (in 1898), after an attack of diphtheria. The patient complained of numbness in the outer parts of the legs (chiefly the left one) and breathlessness on excitement and exertion, but these troubles may have been quite independent of the abnormality in the subcutaneous fat.

I cannot here give an account of all the published cases of lipodystrophia progressiva, but must refer to my recent article on the subject in the 'Quarterly Journal of Medicine' (35), from which I have borrowed the material for the present paper, and to the accompanying table of female cases.

There remains, however, a group of cases of bilateral atrophy of the subcutaneous tissues of the face, which have been supposed to be allied to progressive facial hemiatrophy, in fact, thought to be (if the expression be permitted) a progressive "bilateral facial hemiatrophy." Many of these have occurred in males, and since the publication of certain remarks by A. Simons (25), and since the above-described observations of Gerstmann (33) and Gerhartz (34), one may well suppose that some of them represent a modified (more limited) form of lipodystrophia progressiva in males, and it is possible that the latter disease is more frequently limited to the face (or face and neck) in males than in females. Some of the following examples have been quoted by H. Oppenheim, of Berlin, in his large, well-known text-book.

A. Schlesinger (16) refers to a case of that kind observed by himself, two cases recorded by Moebius, one by Julius Wolff (17), and one by Flashar (18). Schlesinger's case was that of a girl, aged 10 years, in Monti's clinic. The facial atrophy commenced at four years of age, a few months after measles. It was not accompanied by neuralgia or any kind of pain, and it was noticed on the left side of the face before the right side was involved. One of Moebius's two patients was a woman, aged 28 years, in whom the bilateral facial atrophy was first observed after she complained of pains following an injury to her right eye. The other of Moebius's patients was a woman, aged 19 years, in whom the bilateral facial atrophy was said to have followed local pains and an attack of pneumonia. Wolff's patient was a woman, aged 24 years, in whom the right side of the face commenced to waste before the left side was involved. Flashar's (and Eulenburg's) case was that of a woman, aged 23 years, in whom progressive bilateral facial atrophy followed a supposed attack of measles (without cutaneous eruption) at about four years of age.

Table of more or less fully described Cases in Females.

Reference.	Age of patient when the affection was first noticed.	Age of patient when the case was described.	Parts affected by the fat-atrophy.	Condition of other parts.	Remarks.
1. Campbell (2) . .	6 years	21 years	Down to pelvic bones	Abundant fat in buttocks and lower extremities	Of Hebrew parentage. Temporary cosmetic improvement by subcutaneous paraffin injections.
2. Simons and Holländer (5 and 6)	11 years	21 years	Down to pelvic bones	Excess of fat in buttocks and lower extremities	Increase of size of gluteal region noted at 5 years of age. Temporary cosmetic improvement by subcutaneous injection of human fat. Biopsy examination made.
3. Weber (3) . .	Probably 16 years	27 years	Down to pelvic bones	Normal amount of subcutaneous fat in buttocks and ⅛ lower extremities	Of Hebrew parentage. Very active disposition.
4. Weber (35) . .	7 years	Over 30 years	Said to be limited to face and neck	Apparently normal	Commenced after measles. Has long been non-progressive.
5. Osler, recorded by Weber (3)	5 years	28 years	Down to pelvic bones	"Plumpness" of parts below the hips	Fat-atrophy quiescent. Feels well, and in capacity for work is stronger than most women.
6. Fawcett (4), recorded by Weber (35)	8½ years	About 19 years	Down to pelvic bones	Normal amount of subcutaneous fat in buttocks and lower extremities	Fat-atrophy long quiescent. Enjoys ordinary health.
7. Pic and Gardère (8)	Age not stated	4 years after commencement	Down to the umbilicus	"Pseudo-hypertrophy" of the pelvic region and the lower extremities	A course of treatment by rest and feeding led to increase of fat in the lower extremities, but not in the face, thorax, and upper extremities.

8. Laignel-Lavastine and Viard (9)	22 years	39 years	The chest was thin and there was general slenderness of the upper part of the body	Excess of subcutaneous fat in lower extremities and buttocks	Increase of fat first noticed in the legs at 22 years of age.
9. Cautley (29), quoted by Weber (35)	6 years	24 years	Face and upper part of the body appeared thin	Excess of subcutaneous fat in lower extremities and lower part of abdomen	The increase in the size of the legs commenced after diphtheria at 6 years of age.
10. Barraquer, quoted by Laignel-Lavastine and Viard (9)	13 years	25 years	Face and upper part of thorax	"Plumpness" of lower part of trunk and lower extremities	The fat-atrophy commenced rapidly after an influenzal attack at 13 years of age.
11. Cohn (10) . .	6 years	17 years	Down to pelvic bones	Excess of subcutaneous fat in lower extremities and buttocks	The patient complained of weakness in the arms, etc. Her father had had syphilis.
12. Lewandowsky (11) .	A young woman	2 years after commencement	The face and trunk, but not arms, were affected	The buttocks were overloaded with fat	The arms as yet had preserved their normal subcutaneous fat.
13. Herrman (12) . .	6 years	32 years	The face, neck, arms, and thorax	Excess of subcutaneous fat in the lower part of the trunk and in the lower extremities	Of Russian Hebrew origin. Beyond the disfigurement there were no bad effects from the disease.
14. Feer (13). . .	6 years	12 years	The face, neck, arms, and thorax	Abundant fat in thighs and buttocks	Increase of subcutaneous fat not very excessive. Biopsy examination made.
15. Boissonnas, recorded by Feer (13)	6 years	10 years	The face, neck, arms, and thorax	Excess of fat in thighs, buttocks, and abdominal wall	The obesity of the abdominal wall is a special feature of this case.
16. Jolowicz (14) . .	8 years	21 years	The face, neck, arms, and thorax	Excess of subcutaneous fat in thighs and buttocks	At 9 years of age there was temporary arrest of mental development.
17. Christiansen (15) .	12 years	18 years	The face, trunk, and arms	Excess of subcutaneous fat in lower extremities and buttocks	Temporary cosmetic improvement by subcutaneous paraffin injections.

A case described by Nicaise (19) does not concern us in regard to the present question, because the facial atrophy (in a woman, aged 24 years), although it was bilateral (as far as it went), affected only a vertical stripe, exactly in the middle line of the face, from the root of the nose to the margin of the hairy scalp. It was doubtless allied to the "morphœa" kind of sclerodermia.

Bilateral wasting of the subcutaneous tissues of the face has also been observed in connection with skin lesions (lupus erythematosus ?) and in connection with ozæna (Okouneff, 1907).

Other cases of bilateral facial atrophy have been recorded in England. In 1905 H. Batty Shaw (20) demonstrated a boy, aged 10 years, who had commenced to show bilateral wasting of the subcutaneous tissues of the face when he was two-and-a-half years old. The boy was brought to the hospital because his mother feared he might have tuberculosis. A. F. Hertz and W. Johnson (21), in January, 1913, brought forward the case of a young man, aged 26 years, whose face had become progressively thinner during the last two years, so that his friends thought he must be consumptive. There was no weakness of the facial muscles, and otherwise he was well developed and strong. He had had double otorrhœa in childhood. The same authors (22), somewhat later, met with another case of bilateral atrophy of the face, but in that case it was associated with wrist-drop from lead palsy. The patient was an Italian plaster-modeller, aged 38 years. In his book on 'Diseases of the Nervous System,' J. S. Bury has reproduced the photograph of a young lad with bilateral facial atrophy (23).

Other cases somewhat of the same kind have recently been described by J. Husler (1914) (24). He gives portraits of two boys, aged 10 and 9 years respectively, affected in this way. According to A. Simons (25), however, both Husler's cases are genuine ones of lipodystrophia progressiva, differing from typical cases only in the sex of the patients. Yet it should be remembered that typical facial hemiatrophy may commence with wasting apparently limited to the subcutaneous fat.

This brings me to the microscopical appearances of the skin in typical cases of lipodystrophia progressiva. As already stated, the only change that was found from the "biopsy" examination in Simons's case was practically complete absence of subcutaneous fat. The disappearance of the fat was more complete than what is found in the emaciated subjects of the last stage of chronic pulmonary tuberculosis. This result has been confirmed by "biopsy" examination in Feer's first case (13). The lean skin of an affected part in

that case showed nothing abnormal, excepting relative absence of subcutaneous fat. E. Kuznitzky and E. Melchior have discussed the question of lipodystrophia progressiva in describing the case of a very thin man, aged 20 years, with a chalky deposit in the subcutaneous tissue at the right elbow (26), but their case appears to me to be allied rather to those of so-called "calcinosis" (multiple calcification in the subcutaneous tissues), with or without the coexistence of sclerodermatous changes (27). The atrophic process recently described by T. C. Gilchrist and L. W. Ketron seems to be of a hitherto unrecorded kind. Their case was that of a girl, aged 8 years, with an affection in her legs, which the authors say is unique; it is an "atrophy of the fatty layer of the skin, preceded by the ingestion of the fat by large phagocytic cell-macrophages" (28).

In regard to the question of the true nature and ætiology of lipodystrophia progressiva I must refer to the disease known in England as "diffuse symmetrical lipomatosis," the sides of the face, shoulders, upper arms, and back of the thorax are often specially affected, as well as the neck. The disease should be mentioned here because to some extent the change in the subcutaneous fat is the opposite of what occurs in "lipodystrophia progressiva." Moreover, it occurs almost exclusively in males. I have seen only one case in a female (30). The patients have practically all of them indulged in malt liquor or other alcoholic drinks. The accumulation of subcutaneous fat in the upper arms in this condition may, as I can vouch, actually hinder movements in the shoulder-joints and prevent the sufferer from getting his coat on and off quickly. I have no doubt that A. Bittorf's case (31) to which Feer (13) refers, for purposes of contrast, was an acute example of diffuse symmetrical lipomatosis of this kind. The commonest clinical forms of the disease are those of the by no means very rare "diffuse lipomata of the back of the neck," or "Madelung's Fetthals," so called in Germany because Prof. O. W. Madelung wrote about it in 'Langenbeck's Archiv' in 1888 (32). Bittorf's patient was a brewer, aged 28 years, and Bittorf suggested the term "adipositas acute symmetrica partialis of thyroid origin" because a good result was obtained in his case by thyroid treatment.

Conclusions.

In conclusion, I wish to emphasise that certain observations show:

(1) That "lipodystrophia progressiva" is not always *progressive*, certainly not in regard to the extent of the area affected.

(2) That it usually commences in childhood, especially at six to eight years of age.

(3) That in some cases the fat-atrophy in the upper parts was preceded by increase of fat in the buttocks or legs (Nos. 2, 8, 9, in my table of female cases); this increase in fat was, therefore, apparently the first sign of the commencement of the disease or syndrome in question.

(4) That this disease or syndrome is not confined, as at first it was supposed, to the female sex. Genuine examples have been recently recorded in males, and it is probable that some of the cases (especially in males) which were formerly labelled "bilateral facial atrophy" were likewise genuine (though less extensive) examples of lipodystrophia progressiva. Perhaps it will be found that in males the fat-atrophy is more often limited to the face and neck than in females.

(5) That the ætiology is unknown, but is probably connected with a disorder of the internal secretions (endocrinic origin).

(6) That the fat-atrophy, however disfiguring it may be, and though it may give rise to annoying suspicions of tuberculosis, etc., does not signify any danger to life, and is not usually accompanied by loss of strength and general health.

References.

(1) A. Simons.—'Zeitschr. f. d. ges. Neur. u. Psych.,' Berlin, 1911 (Originalien), v. p. 29; Eugen Holländer, 'Münchener med. Wochenschr.,' 1910, lvii, p. 1794. Excellent illustrations of the same case and other cases are given by C. Herrman, of New York, 'Arch. Intern. Med.,' Chicago, 1916, xvii, pp. 516–524.

(2) H. Campbell.—'Trans. Clin. Soc. Lond.,' 1907, xl, p. 272. See also H. Campbell, 'Proc. Roy. Soc. Med.,' Neur. Sect., 1913, vi, p. 71,

(3) F. Parkes Weber.—*Ibid.*, 1913, vi, pp. 127–133.

(4) J. Fawcett.—Case recorded by Weber (see 35).

(5) Simons.—*Loc. cit.*, and also 'Zeitschr. f. d. ges. Neurol. u. Psych.,' Berlin, 1913 (Originalien), xix, p. 377.

(6) See additional remarks by A. Simons in the discussion reported in the 'Berl. klin. Wochenschr.,' 1913, l, p. 1455, and in Simons's second paper, *loc. cit.* (with microscopic drawings).

(7) F. Parkes Weber.—'Proc. Roy. Soc. Med., *loc. cit.*, p. 130.

(8) Pic and Gardère.—'Lyon. méd.,' 1909, cxiii, p. 61.

(9) Laignel-Lavastine and Viard.—'Nouvelle Iconographie de la Salpêtrière,' Paris, 1912, xxv, p. 473 (with plate).

(10) Toby Cohn.—'Berl. klin. Wochenschr.,' 1913, l, p. 1322.

(11) A. Simons.—*Ibid.*, 1913, l, pp. 1454–5.

(12) C. Herrman.—'Arch. Inter. Med.,' Chicago, 1916, xvii, pp. 516–524.

(13) E. Feer.—'Jahrb. f. Kinderheilk.,' 1915, lxxxii, p. 1, with illustrations. The second case has been demonstrated by Dr. Boissonnas, of Geneva, on January the 29th, 1914, at the Medical Society of Geneva ('Rev. Méd. de la Suisse romande,' Geneva, 1914, xxxiv, p. 214).

(14) E. Jolowicz.—'Neurol. Centralblatt,' Leipzig, 1915, xxxiv, p. 930 (illustrations).

(15) Viggo Christiansen.—"Lipodystrophia progressiva," 'Hospitalstidende,' Copenhagen, 1914, lvii, pp. 225 and 269. Abstract in 'Zeitschr. f. d. ges. Neur. u. Psych.,' 1914, ix, p. 750.

(16) A. Schlesinger.—'Arch. f. Kinderheilk.,' Stuttgart, 1905, xlii, pp. 374–9.

(17) J. Wolff.—'Virchow's Archiv,' 1883, xciv, p. 393.

(18) Flashar.—'Berl. klin. Wochenschr.,' 1880, xvii, p. 441.

(19) Nicaise.—'Rev. de Méd.,' Paris, 1885, v, p. 690.

(20) H. Batty Shaw.—'Trans. Clin. Soc. Lond.,' 1905, xxxviii, p. 222.

(21) Hertz and Johnson.—'Proc. Roy. Soc. Med.,' Clin. Sect., 1913, vi, p. 92.

(22) *Ibid.*, 1914, vii, p. 11. See also Hertz and Johnson, "Two Cases of Bilateral Atrophy of the Face," 'Guy's Hosp. Rep.,' London, 1913, lxvii, p. 112.

(23) Judson S. Bury.—'Diseases of the Nervous System,' Manchester, 1912, p. 267, fig. 102.

(24) J. Husler.—'Zeitschr. f. Kinderheilk.,' Berlin, 1914 (Originalien), x, p. 116.

(25) A. Simons.—"Bemerkungen zur Arbeit J. Huslers," 'Zeitschr. f. Kinderheilk.,' Berlin, 1914 (Originalien), xi, p. 508.

(26) E. Kuznitzky and E. Melchior.—"Subcutane Lymphsackbildung und Kalkablagerungen in der Haut bei universellem Fettschwund: ein Beitrag zur Kenntnis der Lipodystrophia progressiva," 'Arch. f. Derm. u. Syph.,' Vienna, 1916, cxxiii, p. 133.

(27) See the references given by F. Parkes Weber, "Subcutaneous Calcinosis or Multiple Calcification in the Subcutaneous Tissue," 'Trans. XVIIth Internat. Cong. Med.' (Sect. Derm.), London, 1913, p. 179.

(28) T. C. Gilchrist and L. W. Ketron.—'Bull. Johns Hopkins Hosp.,' Baltimore, 1916, xxvi, p. 291 (good illustrations); also in the 'Journ. Cut. Dis.,' Boston, U.S.A., 1916, xxxiv, p. 728.

(29) E. Cautley.—'Proc. Harveian Soc. Lond.' (not yet published).

(30) F. Parkes Weber.—"Diffuse Lipomatosis in a Woman," 'Trans. Clin. Soc. Lond.,' 1904, xxxvii, p. 220; *cf.* F. P. Weber, "Diseases in their Relation to Obesity," 'Med. Press,' London, 1916, cli, p. 119.

(31) A. Bittorf.—"Zur Kasuistik der Störungen der inneren Sekretion," 'Berl. klin. Wochenschr.,' 1912, xlix, p. 1072.

(32) O. W. Madelung.—"Ueber den Fetthals," 'Langenbeck's Arch. f. klin. Chir.,' Berlin, 1888, xxxvii, p. 106. Madelung refers to a good deal of older English literature on the subject.

(33) J. Gerstmann.—'Wien. klin. Wochenschrift,' 1916, xxix, p. 1209.

(34) H. Gerhartz.—'Münch. med. Wochenschrift,' 1916, lxiii, p. 823.

(35) F. Parkes Weber.—"Lipodystrophia progressiva," 'Quart. Journ. Med.,' Oxford, 1917, x, p. 131.

Addendum.

(36) A. V. Neel.—"Lipodystrophia progressiva," 'Hospitalstidende,' Copenhagen, 1916, lix, p. 1253. Neel gives illustrations of two female patients, but unfortunately his paper arrived too late for me to make use of it.

A NOTE ON URETERAL CALCULI IN CHILDHOOD.*

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The lodgment of renal calculi in the ureter is a pathological phenomenon occasionally encountered in early life, but it must be uncommon for the very simple reason that renal lithiasis is an affection of adult life. In the cases reported arising in childhood, the stone has usually been found lodged in the pelvic portion of the ureter, and should this occur on the right side great care must be exercised in order to avoid making the erroneous diagnosis of appendicitis, a mistake that I very narrowly escaped making some years ago in a boy, aged 8 years. Had it not been for the fact that the urine contained a few blood-corpuscles and some leucocytes on microscopical examination and that there was no rise in temperature or pulse, I should not have been led to having the child radiographed (which revealed a perfect picture of a stone in the pelvic portion of the ureter), so closely allied were the symptoms to those present in cases of chronic inflammation of the appendix with extensive adhesions. Extraperitoneal ureterotomy and ureterorrhaphy were done, resulting in an uncomplicated recovery.

When a calculus has been satisfactorily proved to exist in some portion of the ureter, its removal by an extra-peritoneal operation is clearly the only logical treatment, as its presence ultimately will lead to destruction of the renal gland from pyonephrosis or uronephrosis, not to mention other complications, such as periureteritis with an ulcerative process, finally resulting in perforation, followed by a ureteral fistula or perinephritic abscess.

One may resort to cystoscopy in children to some extent, and this diagnostic measure reveals the condition of the ureteral orifice on the affected side, as has been so admirably demonstrated by Fenwick, but exploratory catheterisation of the ureter does not appear to have been undertaken in cases of calculi in children, although there exist ureterocystcopes constructed for children allowing a no. 4 ureteral catheter to be passed. But since radiography will tell the

* A paper read before the Société Médicale de Genève, February the 7th, 1917.

tale accurately, it would appear that ureteral exploration will rarely, if ever, be required.

It clearly seems as if the prompt and early removal of a ureteral calculus in a child is even more urgently indicated than in the adult, for the reason that the ureter in the former is of such small calibre that the stone, once lodged within its lumen, will become a permanent fixture, giving rise in the near future to all the disastrous complications already referred to.

The incision of the abdominal parietes will, as a matter of course, depend somewhat upon the site of the stone. The iliac incision nicely exposes the iliac fossa and small pelvis, and is merely the same incision as that used for ligature of the external iliac artery, only it is carried farther upwards and downwards. If the calculus is situated in the lumbar portion of the ureter, the latter should be searched for at the lower renal pole, and usually the stone can be teased down by gentle digital manipulation until it is within easy reach and can be removed through an incision of the ureter.

A non-infected and only slightly dilated ureter is easily detected, but the same cannot be said of an inflamed and greatly dilated ureter. In this case the tube is deformed and more or less hidden in a bed composed of dense fibro-lipomatous tissue which adheres to the surrounding structures, so that much patience and careful search on the part of the surgeon are essential. Incision of the ureter on the calculus suffers no exception, excepting when the stone is very moveable in a dilated ureter. In this case the incision of the ureter should be made just above the point of the stricture which has given rise to the dilatation, and the stone then being pushed down to this point is retained in place between the thumb and index finger of the operator while the ureter is incised upon it. It is hardly necessary to say that the ureter should have in the first place been dissected out of its bed, after pushing off its peritoneal covering, sufficiently to allow one to grasp it with the thumb and index finger. By making the incision on the stone, injury to the opposite wall of the ureter is avoided, and then, too, the incision need not be as large as the stone, because the concretion will generally slip out through a relatively small slit.

If the calculus is embedded in the walls of the ureter and very adherent to the mucosa, it must be very gently teased out with a pair of very fine scissors, such as oculists employ, otherwise, if this is brutally done, a tear in the wall will readily ensue, thus compromising the result of the suturing.

When the calculus has been extracted it is of prime importance to

ascertain the permeability of the lumen of the canal in its entire extent, in order to discover the possible presence of other calculi or a stenosis. If the lumen is found to be intact, it only remains to suture the ureteral incision, or simply to drain, as the surgeon may prefer.

Personally, I prefer to close the ureteral incision by sutures, and on account of the small size of the ureter in children we advise the use of linen thread, No. 500 or even No. 700, such as one employs for suture of the blood-vessels. The sutures should *not* include the ureteral mucosa. The only contra-indication to suture of the ureter is when, from great dilatation, the walls of the tube are reduced to such thinness that it is impossible to insert the sutures without including the mucous membrane. When such is the case, the peri-ureteral structures are to be brought together without tension, and a small drain is placed down to the opening in the ureter. I am decidedly of the opinion that an infected ureter, or a large incision into it, are better treated by ureterorrhaphy than by drainage, primary union having been the usual result. The sutures should be inserted a half a centimetre apart, and if, as I recommend, fine linen thread is used, this can easily be done. Some operators insert a ureteral catheter and sew over it, withdrawing the instrument after all sutures are placed, but before tying them, but I have never been able to convince myself of the necessity of this.

If, after exploration of the entire lumen of the ureter, a stenosis is found, this must be divided, otherwise a permanent ureteral fistula will inevitably result. One may deal with this lesion by internal ureterotomy with Albarran's instrument, or the stricture may be cut from without inwards, this being followed by ureteroplasty. Whichever technique is resorted to, a ureteral catheter must be inserted down into the bladder and brought down and out through the urethra.

A small cigarette drain should be inserted, and the skin incision and that of the muscles closed as in any other abdominal operation, catgut being used for the muscles, silkworm gut for the skin. Other forms of drainage can of course be used, according to surgical common sense.

In closing, I would refer to Gibson's technique for exposing the ureter low down, as I fancy that in children particularly it would be of considerable advantage, although I have never had the opportunity to resort to it. "The incision is begun in the median line above the pubis, extending outward about a finger's breadth above Poupart's ligament until about its middle, when it curves rather abruptly

upward and outward to a point on the level with the anterior superior spine of the ilium (see Fig. 1). The aponeurosis of the external and internal oblique is then severed in the line of the skin incision; sometimes some of the fibres of the internal oblique are included. The flap which is thus outlined is separated upward; at the border of the rectus muscle the fascia of the transversalis is opened by a

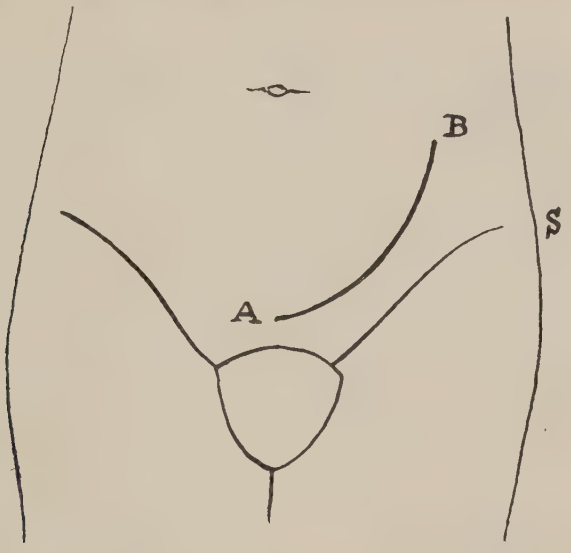

Fig. 1.—Gibson's incision for exposing the lower portion of the ureter. A. B. Gibson's incision. S. Anterior iliac spine.

vertical incision; retractors having been introduced, the peritoneum is separated with the patient in the Trendelenberg position, so that by retracting the rectus muscle inward and the transversalis outward, the lower end of the ureter and base of the bladder are exposed in an ample space" (Chetwood, 'The Practice of Urology,' 1913, p. 647).

A CASE OF MULTIPLE URINARY CALCULI.

By Frederick C. Pybus, M.S., F.R.C.S.,

Surgeon to the Hospital for Sick Children; Assistant Surgeon to the Royal Victoria Infirmary, Newcastle-on-Tyne.

Urinary stone when attended by infection of the tract is perhaps one of the most painful and distressing conditions to which children are liable. The patient whose history is here recorded suffered in

an unusual degree, and his condition was reduced to one of great misery. Much of this might have been avoided had a systematic examination of his urinary tract been made at the time of his original illness.

The patient, a boy, aged 10 years, was admitted to the Hospital for Sick Children in June, 1915, with marked swelling of the scrotum,

Fig. 1.—Skiagram of oval stone in pelvic position of the left ureter.

penis, and lower abdomen. He had also great pain and difficulty in micturition.

The parents stated that three years before he had had a similar condition and was then admitted to another hospital. On this occasion multiple incisions were made in the scrotum and groins, and a calculus was found impacted in the urethra. This was pushed back into the bladder, as it was impossible to withdraw it from the

meatus. When the wounds were nearly healed, he was discharged from hospital without any further search or treatment. (This has been verified by an examination of the hospital notes.) Shortly after his return home he passed a small stone per urethram and was relieved for some time. At this period his peculiar facial appearance was noted and he was described as a cretin.

Some time before his second attack he had had pain and frequency of micturition. On his admission to the Hospital for Sick Children

Fig. 2.—Skiagram of rounded stone in right kidney.

he had retention and extravasation of urine for a second time; the scars of the old operation were plainly visible. As I was abroad on military service he came under the care of my assistant, who made incisions in the scrotum and extracted a small stone which was impacted in the urethra. He was considerably relieved after this, and a day or two later passed a larger stone per urethram. He was then submitted to X-ray examination, which revealed an oval calculus in the pelvic portion of the left ureter (Fig. 1) and a second situated in the right kidney (Fig. 2). The skiagrams show these conditions.

The accompanying cystitis was now treated and he was discharged from hospital with instructions to report as an out-patient.

When I saw him in October, 1915, he still had frequency of micturition, was constantly wet, and had the usual odour. His facial appearance suggested cretinism, but his mental backwardness might, I thought, be due to the long-continued sepsis of his urinary tract.

X-ray examination showed that after three months the stones had not altered in position, so it was decided to remove them. *Operation* (1).—October the 22nd, 1915 : An incision was made parallel to the outer half of Poupart's ligament. The peritoneum was pushed aside and the deep epigastric artery ligated. The ureter was seen on the peritoneum; it was dilated, and on peristalsis became a tortuous white cord. The stone was found just above the ureteric orifice and was milked up as far as the pelvic brim. It was impossible to bring it further up, so the ureter was incised and the stone extracted without difficulty. No sutures were inserted in the ureter. A rubber tissue drain was placed down to the ureteric opening and the wound closed.

The first operation wound being soundly healed a second operation was performed on November the 14th. I explored the right kidney. No stone could be palpated either in the pelvis or kidney substance. The pelvis was therefore opened on its posterior aspect and a probe discovered the stone in a calyx, from which it could not be dislodged. The wound in the pelvis was closed by one catgut suture and an incision made through the renal substance into the calyx, from which the stone was extracted. The renal wound was closed by one suture.

Convalescence was uninterrupted, and he was discharged on December the 11th. Pyuria was still present, but he was greatly improved in general condition. Indeed, one would hardly have recognised him as the miserable being who was admitted.

Examination in June, 1916, showed no pus in the urine, no further stones in the urinary tract, and a great improvement in his condition both bodily and mentally.

THE PRESENCE OF MENINGOCOCCI IN THE PURPURIC ELEMENTS OF MENINGOCOCCAL INFECTION.*

By Arnold Netter and Marius Salanier.

Cerebro-spinal meningitis is sometimes accompanied by petechial eruptions. In that case it usually presents a special gravity which gained for it in Ireland in 1866 the name of the "Black Death," which was used in the Middle Ages to signify plague.

These purpuric forms have become more frequent during these last two years (17·6 per cent. in 1916 as compared with 2·77 per cent. from 1908–1914) without, however, attaining the frequency which they showed at the beginning of the last century in America and in 1866 in Ireland.

We have been able to prove that contrary to the generally received opinion these cutaneous hæmorrhages are not due to intoxication, but result from the deposit of meningococci around the vessels.

We show the Society the specimens obtained from two cases by staining smears taken from the vesicles which developed on the surface of the purpuric patches. They show a collection of diplococci decolourised by Gram's method and resembling coffee berries, exactly like those found in the cerebro-spinal fluid. The first case was one of meningococcal infection without meningitis. In the second case the meningitis was preceded by purpura.

The first preparation made on March the 7th, 1916, was obtained from an infant of 6 months, admitted on March the 5th, on the day of onset of the disease, with little pink spots like measles all over the body. On the following morning the rash was fading, but we found all over the body and especially on the face, buttocks, and legs violet spots of various sizes and irregular outline, some of which resembled the figures obtained by dropping some ink in the centre of a sheet of paper and then folding it in four. The temperature was about 104° F., and rose the following day to 105·9 and even 106·1° F. There was no sign of meningitis. Lumbar puncture gave issue to a normal clear fluid. We thought, however, that there were grounds for regarding the symptoms as associated with a meningococcal infection, and therefore had the lumbar puncture followed by an injection of 20 c.c. of a mixed anti-meningococcal serum. The diagnosis was confirmed next day by microscopical examination of the serum from a vesicle which covered a part of

* A paper read before the Société de Biologie, Paris, on July the 22nd, 1916.

the purpuric lesion. Other changes which are known to be frequently associated with meningococcal infection were found on the following days, viz. on March the 16th an *irido-cyclitis* of the right eye which ran a typical course, and on the 24th *arthritis* of the left elbow. Some of the purpuric lesions ended in sloughing.

The child's general state seemed to benefit by the specific treatment. Two intrathecal injections of anti-meningococcal serum were given (50 c.c.), and eight subcutaneous injections (80 c.c.).

Unfortunately at the beginning of April an intercurrent erysipelas supervened and the child's state appeared to be desperate when he left hospital on April the 17th.

In the specimens taken from the second patient the diplococci are less numerous, but equally characteristic. They were taken from a child, aged $5\frac{1}{2}$ years, under the care of our colleague, Dr. Triboulet. The child was suddenly seized in the night of July the 3rd–4th with vomiting and general pains. The temperature was 104° F. There was no sign of meningitis. All we could find were a few violet-coloured petechiæ on the thorax and the left ankle. On July the 5th the purpuric eruption had considerably increased. Although there was no sign of meningitis the house physician, Mlle. Blanchier, performed lumbar puncture which gave issue to a clear fluid without hypertension, with a normal albumin content, containing nine cells per cubic m.m. almost exclusively polymorphonuclears. No micro-organisms were found either in smears or cultures.

On July the 6th the patient's appearance changed. Meningeal symptoms were definite (nuchal rigidity), slight Kernig and convergent strabismus).

The purpuric eruption had increased still more, and the interphalangeal joints of the hands and the wrists showed redness, swelling, and tenderness (*polyarthritis*). This time lumbar puncture gave issue to a turbid fluid under hypertension containing polymorphonuclears and meningococci which we had no difficulty in cultivating.

On July the 7th examination of a small purpuric vesicle showed meningococci.

The child died on July the 8th, although he had had 120 c.c. of anti-meningococcal serum intrathecally on three successive days.

In this case as in the first a blood culture was made, but did not show meningococci.

In a third case of acute meningitis with purpuric onset we were unable to find the meningococcus.

In our first two cases microscopical examination showed the meningococcal nature of the purpuric lesions, although in the first there had never been any meningitis (lumbar punctures of March the 6th, 7th, 8th, and 17th), and in the second case the first puncture showed an absence of suppuration in the cerebro-spinal fluid. The meningococci did not attack the meninges at all in the first case, and in the second case not until several days after the onset of the disease.

The discovery of meningococci in the eruption need not surprise us. It is just the same as the finding of Eberth's bacilli in the rose spots of typhoid fever. In both cases the blood contains the pathogenic micro-organisms.

We have even been able to find the meningococcus in direct examinations of the blood, as is shown by two specimens in May, 1915, taken from a case of cerebro-spinal meningitis accompanied by meningococcal endocarditis, and Alfred Coles has published photographs of the same kind ('Lancet,' 1910, I, p. 750), as well as Simon and Wadsworth Skilton.

Benda has also seen bodies possessing all the characters of the meningococcus in the cellular masses surrounding an arteriole in sections of a case of meningitic purpura. He was, however, able to detect them in only one case out of five, which he reported on March the 8th, 1916, to the Berlin Medical Society, and published on April 24th in the 'Berliner Klinische Wochenschrift.'

In 1909 and 1910 we looked in vain for meningococci in the herpetic vesicles which so frequently accompany cerebro-spinal meningitis, and we were not more successful in 1915 and 1916 in three cases in which the herpes was situated respectively on the chin, round the anus, and on the legs. Drigalski is credited with having found meningococci in herpetic vesicles in two cases of cerebro-spinal meningitis in 1905. As a matter of fact there was only a single case, and the vesicles had appeared on the ear lobule on the day after it had been rubbed with an alcoholic solution of soap and a specimen of blood taken from it.

The vesicle formation due to irritation should not be regarded as the same as the herpes of meningitis. It is much more closely related to the vesicles which were used in our investigations. Their appearance on the surface of the purpuric lesions should cause no surprise. Benda, indeed, has shown that in the petechiæ of meningitis the skin is infiltrated with polymorphonuclears.

These observations of ours have not only a theoretical interest. Purpura in meningococcal infection may occur some days before the

meningeal involvement. The latter may remain latent indefinitely or even be absent altogether. The demonstration of the meningococcus in the skin lesions will confirm the diagnosis. It will give us information more quickly than blood culture which alone has been in use hitherto and of which the results are far from constant. And in cases of this kind, which are always grave, an early diagnosis is of the utmost importance, because such a diagnosis alone will enable us to undertake a rapid and intensive serotherapy which is all the more necessary owing to the special gravity of these cases.

A NEW CASE OF HYPERACUTE PURPURA WITHOUT CEREBRO-SPINAL MENINGITIS: RECOGNITION OF ITS MENINGOCOCCAL NATURE DURING LIFE BY MICROSCOPICAL EXAMINATION.*

By Arnold Netter, Marius Salanier, and Mme. Wolfrom.

In our last communication (July the 22nd) we recorded the presence of meningococci in smears taken from the serum of pupuric vesicles in two cases of meningococcal infection and stained by Gram's method. A few days later one of us, at the Société Médicale des Hôpitaux, showed the importance of these purpuric manifestations, which may occur in the course of an obvious case of cerebro-spinal meningitis, precede the meningeal involvement, or even exist apart from any meningitis whatever. We drew attention to the relatively increasing frequency of these purpuras in England and Germany, as well as in France, and their possible confusion with typhus.

Before these communications of ours, only one article, published by Benda on April the 24th, 1916, which came to our notice after our first case (March the 7th, 1916) made mention in one out of five cases of the presence of Gram-negative cocci which Benda thought he could identify with meningococci.

Since our paper of July the 22nd four writers have published similar findings in their specimens of the petechial elements.

Pick ('Deutsch. Med. Woch.,' 1916, xlii, p. 994) reproduced two figures in his article showing typical meningococci either free or intra-cellular in the skin arterioles in the capillaries and perivascular infiltration. The specimens were obtained from two soldiers who had died from meningitis.

* A paper read before the Société de Biologie, Paris, on November the 18th, 1916.

In New York ('Arch. of Ped.,' 1916, xxxiii, p. 641) Sharpe also found, by Pappenheim-Saathoff's method, extra- and intra-cellular meningococci in the capillaries of the ecchymosis of a meningitis in a child aged 3½ years. He believed that this was the first time that such a discovery had been made.

At Prague Ghon ('Deutsch. Med. Woch.,' 1916, xlii, p. 1276), at the autopsy of a girl, aged 9 years, who had died of hæmorrhagic septicæmia without meningitis, found numerous intra-vascular cocci in sections of the petechiæ. Finally, the last issue of our reports ('Compt. rend. Soc. de Biol.,' 1916, lxxix, p. 857) contains a note by Dr. Babes communicated, on May the 3rd, 1916, to the Biological Society of Bucharest, entitled "The Differential Diagnosis of Typhus and certain Hæmorrhagic Forms of Cerebro-spinal Meningitis."

In one of his two cases he saw, in the region of the hæmorrhagic eruption, a collection of round bodies or diplococci, slightly flattened, of varying size and colouration, more or less stained by methylene blue and not by Gram, which were invading the epithelial layers, and even penetrating into the cells of the malpighian layers.

All these examinations had been made *post mortem*, whereas ours were made *during the patient's life*. This is an important point, for it demonstrates the practical importance of our findings from a diagnostic point of view. We, therefore, think it advisable to report a fresh case of primary meningococcal purpura whose nature was revealed during life by microscopical examination.

A male infant, aged 10 months, was born at term and breast-fed. The parents were in good health, and lived in a large well-ventilated court. The father was a horse-dealer, and attended fairs; neither the mother nor the child had had anything to do with strangers lately. The infant had never had any serious disease. A fortnight ago the infant presented all over its body little red spots, in the middle of which a little pimple appeared, but rapidly dried up and formed a crust. The doctor who was consulted thought it was an eruption due to digestive disturbances caused by Nestlé's food, and, as a matter of fact, after this had been stopped the pimples disappeared. The infant, therefore, was in excellent health when, in the afternoon of November the 3rd, 1916, it was seized with shivering and fever. In the evening its head and arms showed some convulsive movements. It was feverish throughout the night, and in the morning the mother found it had large violet spots all over its body. On admission to hospital on November the 4th, at 10 a.m., the child was extremely weak, dyspnœic and cyanosed, and presented slight suprasternal recession. Tempera-

ture, 104° F. All the body was covered with more or less extensive violet patches. Some which were rounded, and of the size of a lentil, with the centre a little paler, were situated on the abdomen and anterior aspect of the limbs. On the contrary, the posterior surface of the limbs, the back and buttocks, *i. e.* the situations exposed to rubbing were covered with large wine-coloured patches resembling post-mortem staining. The mucous membranes were cyanosed also, but did not show ecchymoses. On auscultation we found loud râles in both lungs, especially the right.

In spite of the absence of signs of a meningeal reaction we did a lumbar puncture, which gave issue to a clear fluid (found normal on subsequent examination).

Nevertheless, warned by our experience of previous cases, we injected 20 c.c. of anti-meningococcal serum. About the same time we made several small scarifications with a vaccinostyle in the darkest purpuric patches, and we made smears of the sanguinolent serum obtained. The infant's condition rapidly became worse, and, in spite of injections of camphorated oil and mustard baths, it died early in the afternoon.

We have already said that the cerebro-spinal fluid withdrawn was practically normal, *i. e.* contained no excess of albumin; six leucocytes per cubic mm.; and no micro-organisms. The cultures also proved to be sterile. But in the smears of the serum from the pupura we found definite and characteristic meningococci, though they were isolated and scanty. This purpura of fulminating course was, therefore, as we presumed, a *purpuric form of meningococcus infection without meningitis.*

The interest of these findings, both from a diagnostic and therapeutical point of view, is obvious. In our first two cases the purpuric spots had definite vesicles, and the examination was thereby facilitated. In our last case, in spite of the absence of vesicles and by mere scarification of the purpuric spots, we could just as readily detect the existence of meningococci in this situation, and thus attribute the existence of purpura to its true cause, and thereby justify the treatment adopted. In the present case the serum did not have the time required to destroy the pathogenic agent, but it is to be hoped that, thanks to these findings, other cases may benefit from an accurate and appropriate treatment.

SOME POINTS IN LATERAL CURVATURE OF THE SPINE.*

By J. S. Kellett Smith, F.R.C.S.

The first questions that occur to my mind in investigating a case of lateral curvature of the spine range themselves in somewhat the following order:

(1) Has the curve to do with the spine alone, or is it a "curve of accommodation"?

(2) Is there evidence of any past or present internal condition of the chest likely to cause unequal development of the two sides of the thorax?

(3) Is the standing height of the legs equal?

(1) By a "curve of accommodation" is here meant a curve assumed by the patient as an attitude of ease, in order to relieve pressure on a sensitive viscus or nerve. Such a curve, which is postural at first, may become fixed by the efflux of time and end in more or less bony deformity. A tender viscus may also give rise to a spinal curve by reflex nerve irritation through which a unilateral hypertonus of the abdominal muscles or of the erector spinæ is initiated. In this case the patient is often very little conscious of any internal derangement, pain being generally referred to that particular region of the spine in nervous connection with the viscus affected. Both these causes of a curve of accommodation may be in operation together—*i. e.* the patient may be conscious of the effort of seeking an attitude of ease, and at the same time examination may show hyperæsthesia of the skin with increased tonus and irritability of the underlying muscles at some region of the anterior abdominal wall, and, or on the concave side of the spinal curve only.

These cases occur chiefly in patients of riper years, but they are also found in those of earlier age and are not infrequently associated with cardiac mischief.

It is manifestly useless to attempt any cure of the curve by exercises so long as the initial cause is left operative.

The practical deduction is that any case of lateral curvature in which pain in the back is a prominent feature demands an especially careful examination of all the internal organs, even if the patient does not complain of any discomfort therein. A tender ovary, an

* A paper read before the Section for the Study of Disease in Children of the Royal Society of Medicine on February the 23rd, 1917.

irritated appendix, a painful floating kidney, or a sensitive gall-bladder, for example, may be discovered, and the measures necessary for its relief will at the same time cure the spinal curvature if this be still entirely postural, or will place the patient in a position to receive successful treatment if it be in an early degree of fixation. It would seem superfluous to insist upon this class of case, but experience shows that their real nature is frequently overlooked in practice.

In the past year I had forty-three cases of lateral curvature under observation, and I propose to use these cases to illustrate various points in this paper. In the forty-three there were five examples of accommodation curves; two with left ovarian trouble, total curve right convex; one with movable and tender right kidney, left dorsal and right lumbar curve; one with pain, tenderness, and vasomotor signs over the sensory distribution of the posterior branch of the fifth left cervical nerve, high curve to the right; and one with recurrent biliary catarrh and general tenderness over the liver, total curve left convex.

The first four were in adults. Two (ovarians) accepted operation, one (kidney) refused, and the fourth had the sensitive nerve submitted with success to high-power light.

In each treated case the ultimate result was good, both spinal curve and pain ceasing to give trouble.

The fifth case occurred in a young girl, aged 10 years. Attention to general health, an outdoor life, and a carefully modified series of exercises, which were possible from the beginning, provided a cure.

(2) In his monograph on ionic medication, Stéphane Leduc discussed an interesting phase in the relation between inflammatory affections of the chest and scoliosis. Leaving aside examples of gross mischief, he doubted if average pleural thickenings and adhesions could produce a curvature by reason alone of the contraction of cicatricial tissue. He advocated the view that a pleurisy or a broncho-pneumonic condition long continued might cause a retardation of growth—involving even the skeleton—on the affected side, the results of which would become evident in later years as a partial atrophy in comparison to the healthy side. The *rôle* played in this, and in any subsequent development of a curvature, by pleural thickenings and adhesions would be in limiting the freedom of the respiratory movements, and for this reason he advocated their treatment by chronic ionisation.

I believe we have here described a class of case which is not uncommon, in which one side of the thorax is found to be distinctly

less broad than the other. There is little to be seen from the front.

From the back the affected side seems to have lost its lateral convex contour; it looks even and narrow, and, by reason of this, falsely long in comparison to its fellow, it appears as though it were ribbed up with ribs all of equal length. And quite in the early stage of curvature, when the spine is still capable of median position, the "sky line" of the flexed back shows the rib angles on the sound side to be more prominent than the degree of scoliosis would warrant. The whole appearance is quite typical.

In the forty-three cases there were six examples, in four of which there was a history of severe pneumonia, and in two a history of whooping-cough with pulmonary complications.

(3) The influence of a large difference in the length of the two legs in causing a compensatory curvature of the spine is generally admitted. I wish to discuss here the influence of small differences —those of half an inch or so. For the purpose of measuring these I use a pelvic-level,* consisting essentially of a piece of wood curved to fit the body and carrying a spirit-level adjusted to an upper true horizontal edge. Since it is the standing height of the legs that matters the patient stands erect, feet parallel, knees together and fully extended. A pencil dot is placed over each posterior iliac spine. These are readily found; the situation of each is marked by a dimple in the skin, which is generally unmistakable, and is almost always discernible with ease. The upper edge of the pelvic-level is then applied to the two dots, and the position of the air-bubble in the spirit-tube observed. If one side is shown to be lower than the other slabs of wood are placed beneath the patient's short leg until the bubble is central. The sum of the slabs gives the increased thickness of sole necessary to restore the theoretical base of the spine to true horizontal. The posterior iliac spines are used in preference to the anterior. These latter, on account of their wider distance apart, would tend to minimise any error of observation, but in using them we have to presume that the pelvis is symmetrical. In the forty-three cases there were sixteen in which one leg was shorter than the other by anything up to half an inch, and in two of these the pelvis was so twisted that the anterior spines give a palpably wrong reading, the short leg, as shown by posterior examination, being actually on the side of the higher anterior spine.

Incidentally I may say that flat-foot as a cause of difference in

* Figured in the 'Lancet,' 1911, i, p. 174.

the standing height of the legs was curiously absent in my cases, but many of them presented eversion of the whole foot on one side, or both sides, associated with abnormal shortness of the external malleolus. This developmental error is quite common; in the late fœtus, and even at birth, the malleoli are about of equal length, and if the outer one fails to grow downwards to form an external splint, as it were, to the ankle-joint, some eversion of the foot in walking is a likely consequence. It is one condition, popularly known as "weak ankles," and may be seen frequently in any public thoroughfare.

Of the sixteen cases of short leg, five were short rights and eleven short lefts. An analysis of the former conveys nothing. Two of the cases had the primary curve convex to the right, but one of these had definite signs of sclerotic mischief in the left chest consequent upon pneumonia. Three had the primary curve convex to the left, but here, again, the issue was confused because one of them was left-handed, and another was the case of biliary catarrh, already mentioned, as a curve of accommodation. When we come to the short lefts we are in rather a different position. Four of them presented a single curve convex to the left, and seven presented a double curve with the lumbar section convex to the left. In other words, each of the eleven short lefts presented a curve in entire agreement with the statistics of the case.

These figures are far too few to justify any conclusion, but when we find eleven cases behaving in exactly the same way, then we are justified at least in making a suggestion.

I believe that we have here an argument in favour of the theory put forward in 1912 by Prof. Jansen, of Leyden. He pointed out that the left half of the diaphragm acts more strongly and has a greater excursion than the right half. This asymmetry of action causes a tendency to a left low dorsal curve, which is the common constant factor in the great majority of all cases of curvature. If, then, there is already a tendency for the spine to tilt to the left, this diaphragmatic pull will increase it. Thus, even small deficiences in the length of the left leg assume great importance.

To complete the analysis of the forty-three cases there were two examples of amesial pelvis of the type described many years ago by Richard Barwell, one case following infantile paralysis, one associated with torticollis and another with Sprengel's shoulder, one due to tearing of the deep muscles of the back whilst lifting a heavy weight, one the result of empyema, and one interesting case in which the curvature was discovered after a long period of sling

treatment for a broken arm. The remainder—roughly 25 per cent., since three of the foregoing examples are quoted in a double category—were of the usual type, in which no very evident actuating cause, beyond the habit of harmful posture, could be given.

A CASE OF ACUTE DELIRIUM WITH LOBAR PNEUMONIA IN A CHILD.

By Hugh T. Ashby, B.A., M.D.Camb., M.R.C.P.Lond.,
Visiting Physician to the Manchester Children's Hospital.

The following case is of interest on account of its rarity. The patient was a boy, aged 2 years, who had an attack of lobar pneumonia affecting the right apex. Previous to this he was healthy and well advanced for his age. There was no family history of neurosis or psychosis. The pneumonia was severe, with a temperature of 105° F. for most of the time, but it ran the usual course and the crisis came on the seventh day.

Two days before the crisis he became slightly delirious, but after the crisis, instead of the usual sleep coming on, he became more acutely delirious. During this latter time he sat up in bed and was quite uncontrollable. He could not sleep or take food of any kind and fought anyone who came near him, so that there was the greatest difficulty even in keeping him in bed. The pupils were widely dilated, he was incontinent, did not recognise even his parents, and could say nothing.

The temperature was only slightly raised at this time, the respirations were increased on account of his struggles, and the pulse was so fast as to be almost uncountable.

After thirty-six hours of this acute delirium he began to show slight signs of improvement by taking fluids to drink, although he was still quite uncontrollable. At the end of another twenty-four hours (two and a half days after the crisis) he became more rational and slowly regained his usual health, except that he showed signs of having had a very severe illness.

Treatment consisted of giving large doses of chloral hydrate and bromide (gr. vi of each), which had to be repeated several times before he got any considerable period of sleep. He was also encouraged to take as much liquid nourishment as possible when once he started to do so.

The condition was quite distinct from the so-called cerebral pneumonia in that he had no convulsions and the delirium became more acute after the crisis. There were no signs of meningitis.

I am indebted to Dr. H. E. Lees for permission to publish this short account and for asking me to see this case with him.

Royal Society of Medicine.

SECTION OF THE STUDY OF DISEASE IN CHILDREN.

Friday, January the 26th, 1917.

Dr. R. Hutchison, *ex-President, in the chair.*

Acute Pneumonia with Hyperpyrexia followed by Heart-block.—Dr. J. Porter Parkinson.—A boy, aged 14 years, was admitted to hospital on November 22nd, 1916. He was a healthy-looking boy with a good family and personal history. His temperature was 104° F., but went up to 105° F. four hours later. He had been taken ill four days previously, and there were signs of pneumonic consolidation in the lower lobe of the right lung. His general condition was good. At 8 o'clock the same evening however, the sister noticed a change, and found the temperature to be 110° F. Thinking there might be a mistake she took it again in the rectum with two other thermometers which both registered the same height. Relays of iced towels were applied to the chest and abdomen while the arms and legs were sponged with iced water. Shortly before 9 p.m. the temperature had fallen to 104° F. The cold was then discontinued and an ounce of brandy was given, as the boy, though by no means collapsed, had a rather small pulse of 120. During the period of hyperpyrexia he was neither comatose nor delirious and his breathing was not specially harassed.

The temperature rose again some hours later to 109·6° F. and again was lowered by the same method, though this time iced towels were not placed over the precordium; after this the temperature never rose above 105° F., about which height it remained for four more days, and then on the ninth day of the illness it fell by crisis first to 97·6° F. and next day to 95° F. and was a week before it rose to normal.

During the fever the pulse varied between 120 and 100 until the last two days when it was about 90, at the crisis it fell to between 60 and 70, and two days later it fell to 44. It was then perfectly regular and it was possible to demonstrate by a paper flag on the neck that the rate of beat of the auricle was twice that of the ventricle. After about two days this two to one heart-block altered, the pulse became more rapid and also irregular, or rather intermittent, some auricular impulses being still blocked but more coming through. The pulse now varied between 50 and 60, this condition gradually lessened, and after another week the pulse became almost regular, and the rate normal. During this time the heart-sounds were normal and there was no sign of dilatation. A little over a fortnight after

the temperature became normal the patient was allowed to sit up a little, but as the pulse-rate increased considerably he was put to bed for a further period.

This case was of interest owing to the presence of two rare complications—hyperpyrexia and heart-block. The former was stated to occur in 0·4 per cent. of cases of acute pneumonia, but was much more common in broncho-pneumonia. It was also stated that it was almost always fatal when the temperature rose over 106·6 F. The happy result in this case was attributed to the patient being a young and healthy boy of good physique, and to the promptness of the treatment, which caused less disturbance to the patient than cold baths and was undoubtedly equally rapid in its effects.

Heat-block after acute pneumonia was mentioned by Mackenzie, but he considered it very uncommon, and the experience of most pædiatrists confirmed this. Evidently the poison which had an unusual effect on the heat regulation had also an unusual effect on the heart muscle impairing its conductivity.

Friday, February the 23rd, 1917.

Case for Diagnosis.—Dr. J. Porter Parkinson showed a girl, aged 8 years, the fifth child. The first two were stillborn at full term, the third was quite healthy and was now aged 11 years. The fourth was stillborn at full term, the fifth and sixth were now aged 6 and 4 years respectively and were in good health. The seventh and eighth were stillborn at full term. The parents were healthy and the patient's blood gave a negative Wassermann reaction. She had had measles and whooping-cough some years ago. Two years ago the mother noticed movements in the arms, legs, and face. She was treated for four months, and these slightly improved. After a year she returned to school, and soon the movements became worse and the speech got laboured and her limbs weaker. She now could not be got to speak, but understood what was said to her. She was rather emotional and her expression was dull and her intelligence feeble. The face had a lachrymose expression, and the angles of the mouth were drawn outwards. This was accentuated on any movement. The pupils were equal and reacted sluggishly, fundi normal. No squint or ocular paralysis, or nystagmus. Limbs rather thin, gait rather inco-ordinate, and she stood with feet widely apart. Romberg's sign negative. There were involuntary movements of the hands and fingers resembling athetosis; these were more marked on movement. Reflexes all normal. She felt light touches anywhere, and thermal sense was normal; a pin-prick did not seem to hurt her. The heart, lungs, abdomen, urine, and temperature were all normal.

It might be regarded as a case of ordinary chronic chorea, but some points suggested the possibility of the disease described by Wilson in 'Brain' (xxxiv), under the title of "Progressive Lenticular Degeneration," in which there was bilateral softening of the lenticular nuclei combined with cirrhosis of the liver, the latter giving no clinical signs during life. The points of resemblance were the facial expression resembling the "spastic smile" described by Wilson; the tremors of the limbs and their long duration. On the contrary, except perhaps in the face, there was no spasticity at present.

Precocious Sexual Development.—Dr. T. R. Whipham showed a boy, aged 5 years 11 months, who was remarkably big for his age and presented an adult sexual development. His height and weight were those of an average boy, aged 11 or 12 years, but his muscular and general development gave him the appearance of an even greater age. There were five other children in the family, three older and two younger, who were all normal; no deaths, no miscarriages. The parents were normal, and inclined to be small, the father being 5 ft. 8 in. in height and the mother 5 ft. 2 in. The only history of any possible abnormality in the family was that the patient's great-great-grandfather was said to have been "a very big, powerful man."

The boy was born at full term, and weighed 8 lb. at birth. He cut his first tooth at the age of 8 or 9 months and walked at the age of 16 months. During the first year he was breast-fed. The first signs of abnormal development were noticed when he was aged 16 months, and at $2\frac{1}{2}$ years he weighed over 4 st. His present height was 4 ft. 6 in., and his weight 5 st. 8 lb. The circumference of his head was $21\frac{3}{8}$ in., and that of his neck $13\frac{1}{4}$ in. His chest measured $28\frac{1}{2}$–$30\frac{1}{2}$ in., abdomen 26 in., biceps $8\frac{1}{2}$ in., thigh 16 in. There was slight down on the upper lip and very slight on the chin. Around the nipples and on the chest there was a slight hirsuties, but on the back it was more marked. Axillary hair was present, and on the pubes there was a profuse growth. The penis and testes were remarkably developed and of adult dimensions. The boy was strong and his muscles generally were large and firm, like a man's, and he spoke with a deep voice. He had recently started school, and was naturally, at present in the infants' class. He appeared to be of average intelligence, but in many ways his capabilities were more than were usually found in children of the same age. For instance, he dressed himself, even putting on his collar and tie, and cleaned his own boots. He could peel potatoes, sweep the floor, and wash up the tea things and put them away; he could also be trusted on errands, but he did not as yet know the value of money. He held his own with other boys older than himself, and was said to "eat as much as a man." By nature he was sensitive, especially as regards his size and development. So far as could be ascertained, he had not hitherto exhibited any knowledge of sex or sexual tendencies. His general health was good, the only illness that he had had being measles when a baby.

Fragilitas Ossium.—T. R. Whipham showed a boy, aged 9 years, who all his life had been liable to fractures of the bones from trivial causes. The first fractures occurred when he was five weeks old, both femora being then broken. Subsequently he had fractured the right leg twice, and the right fore-arm, and quite recently had had a fracture of the lower jaw as the result of a fall. He presented marked deformities of the lower limbs, but managed to get about with the help of crutches. His health was good, and he was said to be never ill. He had five brothers and sisters, who were all normal, and there was no history of any similar condition in the family.

Cases of Vitiligo.—Dr. J. L. Bunch showed a girl, aged 10 years, who, during the past twelve months, had developed some fifty patches of vitiligo on the trunk and lower limbs. The face and arms were entirely free. The first patch had appeared on the abdomen as a small white patch, which had now developed until it was the size of a five-shilling piece, dead white in colour, and contrasting strongly with the surrounding brown pigmented

skin. Some of the other patches were also quite round, but many were irregular in shape, and in places adjacent lesions tended to coalesce. There were no subjective symptoms, and no local hyperæsthesia or analgesia could be detected.

The chief point of interest was the rapidity of onset of the disease. Many of these cases were said to occur only in congenital syphilitics, and the patient's mother said that out of eleven children she had only five living. The patient's Wassermann reaction, however, was negative.

Case of Teratoma.—Mr. J. P. Lockhart-Mummery, showed a girl, born October the 25th, 1916, one of twin girls born at seven months; both twins are living. Patient weighed $3\frac{1}{2}$ lb. at birth, the other twin 8 lb. The patient at birth had had a round tumour, about the shape and size of a tangerine orange, attached over the sacrum and lower lumbar vertebræ. The tumour was covered with normal skin, was somewhat irregular in shape, and contained a number of hard nodules. A little to the left of the centre of the tumour was a minute opening, which discharged a few drops of sticky, white fluid at intervals. The tumour did not seem to interfere with the child, and there was no sign of paresis in the legs, and the rectum, on examination with the finger, was normal. The child was so small and weakly that the question of operation had to be postponed, and the operation was not performed until February the 2nd, 1917. During this time the tumour had grown considerably, being three or four times the size it was when the child came into hospital. The diagnosis was made of teratoma, and this was confirmed at operation. The tumour was difficult to remove owing to the extraordinary variety of tissues and complete absence of any normal anatomy in its neighbourhood. The child stood the operation well, and had now completely recovered.

On examination the tumour was an obvious teratoma, and contained portions of a third child. There was intestine containing meconium, cartilage, a structure which looked like an auricle of the heart, but no hair. Microscopic sections showed fibrous tissue, cartilage, intestinal mucous membrane, and a glandular structure, which might be pancreas or salivary gland.

Extensive Tuberculous Infiltration of the Thoracic Contents and Brain.—Dr. Eric Pritchard showed specimens of this condition from a case which during life had been diagnosed as an intra-thoracic new growth. Post-mortem the whole of the thoracic contents were found to be solid masses of tubercle, adherent entirely to the thoracic wall. The physical signs were very curious: there was no air entry at the lower part of the lungs, and the upper part of the lungs showed progressive failure of air entry; yet at no time were there marked rhachi or râles, or moist sounds.

Lipodystrophia Progressiva.—Dr. F. Pakkes Weber.—(*Vide p.* 81).

Some Points in Lateral Curvature of the Spine.—Mr. J. S. Kellett Smith.—(*Vide p.* 107).

Philadelphia Pediatric Society.

October the 10th, 1916, Dr. JOHN F. SINCLAIR, President, in the Chair.

An Unusual Case of Typhoid Fever.—Dr. ESTHER M. WEYL.—The child was a boy, aged 6 years, who was admitted to the Women's Hospital with a history of vomiting, frequent yellow stools, and epigastric pain of three days' duration. The family, social, and past history had no bearing on the case. On examination, the child was found to be well developed although rather pale; there was a diminished resonance over the entire left chest, a soft systolic murmur transmitted equally over the precordium, but the liver and spleen were not palpable. The first two urine examinations showed a few casts. The urine was subsequently negative. The fundi were normal. On the second day after admission, rose-coloured spots appeared on the abdomen. A blood culture and a Widal reaction were negative. During the first week the temperature ranged between 102° F. and 104° F.; respirations were 32, and the pulse 120. The white blood count at this time was 8,820.

During the second week, the temperature was normal in the morning with an evening rise to 102° F. Pulse 112, and respirations 22. The second Widal at this time was also negative. A von Pirquet reaction was positive. The physical examination continued negative with the exception of a few dry *râles* in the upper left chest.

During the third week a relapse occurred, and blood taken at this time showed typhoid bacilli. The spleen now became palpable. The laboratory and clinical findings during the first week raised the question as to whether the typhoid began at this time, or whether the disease really began at the apparent relapse on the third week.

Hypertrichosis.—Dr. FRANK CROZIER KNOWLES and Dr. NEWELL CHRISTENSEN.—The patient was an Italian boy, aged 4 years. There were several other children in this same family who were entirely normal, and, so far as could be ascertained, no other of the child's relations had been affected with excessive growth of hair. The hair was present over the face, forehead, back, legs, under the arms, and, in fact, on almost every area of the child's body, with the exception of the nose and immediately around the eyes. In some places, such as on the back, the hair was 1 to 2 in. in length. The mentality did not seem to be impaired. Dr. Knowles said that these cases were apt to be hereditary, and often some ductless gland was at fault.

Congenital Lues.—Dr. KNOWLES also showed a case which had typical signs, such as fissures around the mouth and anal region, and marked peeling of the skin on the palms and soles. He said that these children could stand large doses of mercury,

Bone Transplantation and Arthroplasty of the Elbow Joint.—Dr. NATHANIEL GINSBURG.—The child had had myelitis of the humerus following an attack of measles in May, 1915. Bone was transplanted from the leg. There had been two operations. At the present time the child had good elbow motion, but the bone growth had been too active and there was more bone produced than was necessary. This case demonstrated the

possibilities of bone transplantation. Dr. Ginsburg said he intended to do another operation. X-ray pictures were demonstrated.

Enlarged Thymus Treated with X rays.—Dr. Percival Nicholson. —This patient was an entirely bottle-fed baby, aged 7 months, who for several months had had a very tight cough which was unrelieved until X-ray treatment of the thymus was instituted. After each X-ray treatment there was improvement. At the present time the child was very much better and had a very slight cough.

Hygroma of the Neck.—Dr. J. R. Wells.—The baby was born with normal delivery. It was very difficult to get any past history on this case. The tumour at the present time was on the left side of the face. In the three weeks in which Dr. Wells had observed the tumour, it had been growing rather rapidly. There was fluctuation, and pressure would send the fluid from one part to another, while the tumour continued as a hard mass in the centre. At the present time there was considerable obstruction to breathing and swallowing.

Ozæna.—Dr. George Coates demonstrated some cases showing the results of vaccine treatment. After reviewing the literature, and discussing the other methods of treatment, Dr. Coates said he felt that while the vaccine treatment did not cure, it offered the best means of combating this disease. The vaccine was made from an organism isolated from beneath the scales on the mucous membrane.

Meningitis closely simulating the Tuberculous Form.—Dr. Thomas Kelly.—This patient had had all the physical findings, and laboratory findings of tuberculous meningitis, except tubercle bacilli in the spinal fluid. The child had recovered and at the present time was perfectly well.

November 14th, 1916, Dr. John F. Sinclair, President, in the Chair.

Treatment of Poliomyelitis from the Standpoint of the Neurologist.—Dr. William Drayton, Jun., said that he did not believe the disease was more than mildly contagious, if contagious at all.

In the treatment of the acute stage, he had tried most of the recommended forms of therapeusis, including normal serum and so-called immune serum (serum from a patient who had recovered from the disease); the adrenalin solution in spinal injections; and most of the other therapeutic measures. After seeing many of the cases injected with serum and adrenalin he believed that lumbar puncture for relief of pressure gave as good, if not better, results than any injection thus far tried. He had seen cases with practically total paralysis of all extremities, chest, back, and neck, make good recoveries with no other treatment than simple lumbar puncture. The percentage recovery from each form of treatment had not as yet been worked out, but there would probably be little difference, if any, in the results.

In his work it was impossible to make fourth-hour spinal injections of adrenalin solution on account of the large number of patients and the small working force. Possibly better results would have been attained if this had been done. He had noticed that the irritability and fretfulness of the patients was much better on cool days. Frequent sponge baths with tepid

and cool water, changes of posture, and good nursing were most essential. The diet should be light, but nutritious, and great attention should be paid to the gastro-intestinal tract, as diarrhœa with mucus was a frequent occurrence.

A few cases had had paralysis of deglutition, and these were fed with a stomach-tube until they were able to swallow. A few had had to be catheterised for some days, as they were unable to pass urine voluntarily.

For respiratory paralysis they had found no successful treatment, as it was due to a central lesion. The ordinary respiratory stimulants were valueless, and from this cause most of the deaths occurred.

Frequency of lumbar puncture depended largely on symptoms. Increasing paralysis, great restlessness, irritability, pain, and meningeal symptoms were almost always benefited by puncture. Puncture might be performed two to four times in twenty-four hours without ill-effect, and be continued for days. Recurrence of meningeal irritation, drowsiness, and irritability were often relieved even late in the disease thereby.

After the most acute symptoms had subsided, the treatment varied with each particular patient. Cases showing mere weakness without definite paralysis frequently recovered spontaneously in a few weeks' time: simple rest in bed being all that was required. More severe cases required a variety of treatment depending upon the pain, parts affected, and the extent of the paralysis. Any muscle or group of muscles might be paralysed, and frequent and careful examinations should be made to discover the exact amount and location.

In the early stage of the disease no active treatment should be attempted. Rest was all that was required.

Prevention of deformity was, however, most important, and in treating paralysed legs, light splints of cardboard, leather, wood or metal well padded, or very light removable plaster casts should be used.

Pain persisted in many cases for a few weeks to two or even three months. Perhaps the commonest seats were beneath the knees, in the calves of the legs, in the feet, thighs, back, and neck. The pain was not as a rule severe, and frequently was only elicited by moving the feet or legs.

A good working rule was absolutely no treatment but rest and the lightest friction until a week or two after the pain disappeared, and then massage, electricity, and exercise might be begun.

Massage should be given by an expert and never by an untrained person. At first a very light daily or second-day treatment, slow effleurage, and gentle petrissage, to the arm six to eight minutes, to the leg eight to ten minutes.

Care should always be taken to avoid tiring the patient Many parents and physicians tried to hurry recovery by letting the child sit up or walk too soon, and by pushing massage and exercises.

When the patient first endeavoured to sit up or stand, unsuspected weakness of the abdomen or back was often discovered. Before these cases were allowed to sit up or walk for any length of time a suitable corset should be applied, as by this means deformity might be prevented. The length of time a child should sit up or be on its feet—for many of the lightly paralysed cases could walk—must be decided on with great care.

Gradual increase in the force and duration of massage should be made, and electricity might be applied when massage was first given. Dr. Boyer, of the Orthopædic Hospital, said that he used exclusively the positive pole of the galvanic current in his treatment of the affected muscles, as that was the only current known that would make these muscles contract.

They began treatments in mild cases after six weeks, and severer cases only after two or three months. Treatments should be given daily, and for a period of not more than say six minutes to an arm, and eight to ten minutes to a leg.

After massage and electricity had been given for some time, they began with remedial gymnastics and muscle training.

Prognosis would frequently be asked for by the parents, and it was never well to venture an absolute opinion as to curability or incurability, for some cases improved remarkably after years of treatment

To summarise, order sufficient rest and inactivity in the early stages; gradual increase of massage, electricity, exercise, and muscle training later, with frequent consultations with the orthopædist for the prevention of deformities; encouragement to the patient and parents; and persistence in treatment, even though little if any improvement seen.

Treatment of Infantile Paralysis during the Period of Recovery.—Dr Bruce Gill said that there were three stages in the course of infantile paralysis. The acute stage lasted until all pain and tenderness had disappeared. It occurred from a few days to a number of months. The stage of recovery occupied about a year following the acute stage. Proper treatment was very essential to as rapid and complete recovery as was possible. The final stage was that of permanent paralysis, during which no further recovery of the power in muscles might be expected. However, the orthopædic surgeon might accomplish a very great deal by operative procedures to secure muscle balance and stability of the affected members.

The pathological condition in the spinal cord at the conclusion of the acute inflammation varied in different cases, and could not be certainly diagnosed in each. Many or few of the motor cells might be dead. In the latter case there would be almost complete recovery if the paralysed muscles were kept in good condition to respond to the return of nerve power when it occurred.

The rapidity and amount of recovery in the paralysed members depended not only upon the recovery of the nerve centres, but upon the maintenance of muscular tone and the prevention of over-stretching or contracture of muscles and ligaments and the deformity of bones and joints.

Normal function of any organ or structure was nature's greatest cause of normal growth. The alternation of periods of activity and rest was her only method of development. The same principle held true during the recovery from infantile paralysis, only the periods of rest should be relatively longer than in normal children, because the paralysed members were weakened. Too great or too long a period of activity would exhaust them. Therefore, to secure proper rest and proper stimulation to activity, and to prevent deformity were the two objects of treatment during the stage of recovery.

The amount of rest which the child should have varied in different cases. Where there was a great weakness, extensive paralysis, or emaciation, the period of absolute rest should continue a long time after the inflammatory symptoms had disappeared. In less severe cases it need be continued no longer than for two or three weeks.

Then stimulation should be begun, slowly, carefully, gently. Hot baths and gentle upward stroking movements should be followed later, as the tone of muscles was recovered by alternating hot and cold baths or douches and by gentle muscle kneading.

The electric current was not used to secure contraction in the weakened or paralysed muscles. The interrupted galvanic current was the best, with the positive pole over the muscles and the negative over the spine. Only a few contractions should be produced at first, and with as weak a current as possible to secure the result.

Every effort should then be made to have the child make active motions, *i. e.* to secure a return to normal function. But the strong antagonists of weakened muscles must not be over-developed. He should be allowed to walk and play and lead a normal life as soon as he could so without production of deformity. If weight-bearing was postponed too long the extremity would fail to develop, the bones would not lengthen, and great shortening would result.

However, in paralysis of the muscles of the back the patient must be kept a long time flat in bed to prevent a paralytic scoliosis; and when the upright posture was assumed the back must be supported by a removable jacket or brace.

When the arms were paralysed the child must be kept in bed longer than usual, and when he got up the arm should be carried in a sling to prevent dropping of the humerus at the shoulder.

Deformity must be guarded against from the very beginning of the treatment. The extremities must be maintained, so that weakened muscles were not over-stretched, strong muscles contracted, capsules and ligaments of joints stretched or contracted. The feet must be kept in a position at a right angle to the leg, the knee and hip must be extended, and internal or external rotation of the thigh must be prevented. A short right-angled splint, with a transverse piece of wood on the bottom, should be bandaged to the foot. This device would keep the entire extremity in a proper position.

When the child was allowed to walk, proper shoes and braces should be applied to prevent any tendency to deformity, and to allow weight bearing before it would otherwise be possible.

The paper emphasised the vast importance of proper treatment during the stage of recovery from infantile paralysis. If this was secured, there would be much less necessity for orthopædic operations in the final stage of permanent paralysis.

TWENTIETH ANNIVERSARY.

December the 12th, 1916, the President, Dr. John F. Sinclair, in the Chair.

The Possibilities of a Pædiatric Society.—Dr. Frank Spooner Churchill (Rush Medical College, Chicago).—The object of any medical society is, speaking broadly, the self-improvement of its members, to the end that they may better perform their duties, whether as private individuals towards their patients, or as citizens towards the community. Another object of a medical society is, or should be, service on its part as an organisation to the public at large. The functions of a medical society are thus of a twofold nature—private or individual, public or communal.

A pædiatric society is an organisation or group of people interested in the study and welfare of the child. Like medical societies in general it has a twofold mission to fulfil—individual or private, community or public. The field of such a society is, however, circumscribed, and limits itself to study

of various phases of child-life. To a comprehensive understanding of the scope of its work we must keep clearly in mind what we mean by the term "pædiatrics."

To the pædiatrician, pursuing his daily work in a large American city, there is much food for reflection as he observes and comes into intimate contact with the conditions affecting the child of to-day almost from the time of conception up to and through the age of puberty. As he contemplates this widely extended field he sees four phases of the individual's existence, distinct, yet merging the one into the other, in each of which the individual's development may be, and often is, seriously affected by social or community conditions: first, the period of his intra-uterine life, during which his mother's physique, and therefore his own, is affected by her external surroundings; second, the critical passage from intra- to extra-uterine life, the period of the newly born, with its sudden change to a new and totally different environment; third, the period of infancy; and fourth, the more prolonged period of childhood, early and late.

The conditions affecting the individual during the second and third phases of his existence, the periods of the newly born and of infancy, are perhaps less intimately connected with industrial and community states than are those during his first period. We have to do here with individual rather than community conditions, inasmuch as we have to combat chiefly personal ignorance—on the part of the attendant during labour, on the part of the mother herself during infancy.

As the individual merges from infancy, and passes now into the fourth and final one of the periods which we are considering, that of childhood, he becomes exposed directly to general community conditions. He begins to mingle with his mates in back yards, on sidewalks, streets, and alleys, in kindergarten and school. During the first part of this period his chief danger is exposure to communicable disease, and the development of physical defects, which, unremoved, may permanently affect his growth. During the latter part of the period he encounters two unfortunate community conditions: unwise school pressure when kept at school; consignment to hard, unhygienic labour when permanently removed from school.

So inextricably interwoven with the social life of the community have many child-problems become, so complex and many-sided are they, that complete private management is impossible, and can never solve these problems entirely. Private effort may do much to help, but cannot, and should not, possess authority. Thus in the infant welfare movement, private organisations equip and maintain stations with a high degree of efficiency, instruct and train thousands of mothers in the care of their infants; private agencies, however, cannot control the conditions of streets and alleys, cannot dictate housing conditions, cannot regulate a city's milk supply, derived as it is from several different states with widely different dairy laws. Obviously the police powers of government must be invoked to control such conditions. Hence it is that many students and workers of this special problem believe that this work, now generally maintained by private agencies, must eventually be taken over and carried on by the municipality—not a pleasant thought when one contemplates the helplessness of the infant and the rottenness of city government in this, our "so-wonderful" country!

Let the pædiatric society be so organised as to lend its aid to the study and solution of the various community problems already discussed, and for

this purpose let there be established, in addition to the usual executive committee, certain standing committees as follows:

A Committee on Infant Welfare.
A Committee on Schools and Education.
A Committee on Playgrounds and Gymnasia.
A Committee on Legislation, Child Labour, and Juvenile Courts.

The establishment and conduct of juvenile courts and the enactment of child-labour laws have not, to my knowledge, ever received from pædiatricians, either as individuals or societies, the attention and support which their importance demands.

In the difficult and widespread field of child-labour, the cruelties and burdens borne by the young in our great, prosperous country constitute a national shame and disgrace, well known to us all, crying aloud for all, with or without medical training, to make every possible effort to correct the evil. A pædiatric society can well lend its influence to the amelioration of this suffering class of children.

It goes without saying that work of this public or community nature should not crowd out or displace the individual work now being done by pædiatric societies. This more personal work, these exhaustive studies on the child already sick—on the machine already out of order—should and must be pursued. I do not intend, nor is there any danger, that studies on the patho ogy and physiological chemistry of the child should be neglected or curtailed. But in addition, let us broaden out our roots of things, strive constantly and insistently to destroy causes which make the child sick, which force him, sick and in great numbers, into our hospital wards, into our juvenile courts, out of our playgrounds, out of our schools prematurely into factory, shop, and mill—in a word, let us apply broadly the general principle of "preventive medicine," or "preventive pædiatrics," to these complex problems so seriously threatening the child-life of the nation.

I believe that efforts along the lines indicated in this paper, efforts both individual and organised, will do much to make our country a better place for children to live in, much to improve the quality of coming generations, will contribute much towards what is, after all, the greatest object in life—the rearing of healthy and happy children.

The Relation between Pædiatrics and General Medicine.—Dr. Henry Dwight Chapin (New York).—The evolution of pædiatrics into the dignity of a specialty has been of comparatively recent date. It is still in process of development. Many obstacles have been encountered in the ascent of this important branch. Some questions are yet in process of settlement. The relation between pædiatrics and general medicine and the position the former is destined to occupy will be determined largely by societies and occasions such as this. It is not necessary to dwell upon the great importance of pædiatrics before any medical assemblage.

The general public, professional as well as lay, however, often seem slow in recognising relative values in the different departments of medicine. The beginnings of life certainly constitute the most favourable period for studying all the phenomena of life—normal as well as abnormal.

Pædiatrics is simply applying the study and practice of internal medicine to one part—and that the most important period of life Here, as in other branches of medicine, we must avoid the danger of over-specialising. When pædiatrics is treated as an extreme specialty, the tendency is to detach it too much from general internal medicine, and both thereby are apt to suffer.

It is a mistake to carry to extremes the specialisation of any branch of medicine. While there may well be specialisation in technique, it should ever be kept in mind that infants, children, and adults are not different species, but merely different forms or stages of a single species.

The chemical basis of life is the same at all stages of the life cycle. The same fundamental food materials are used by the embryo, the infant, the child, the adult, and the aged. The form of the food materials may not be the same at all stages of life, for change in form of the food goes hand in hand in some instances with a change of form and structure in the individual. Milk is a striking example of this fact. Here is a liquid food which turns into a solid under the action of the stomach secretions, the degree of solidity keeping up with the capacity of the stomach to utilise food of increasing density. The casein of milk has a developmental as well as a nutritional function, which has been brought out by a study of the biology of nutrition in connection with the various milks.

The finest possible training for the general practitioner and specialist can be procured by paying full attention to the problems of infant care and nutrition. Here the physician must depend upon his own powers of observation, for the infant cannot tell him anything. It is almost like a laboratory training.

The chemical processes of nutrition in the adult are the same as in the infant, and if they were better understood it would not be difficult for the same physician to manage this problem with either infant or adult. As long as the stress is laid upon matters of form and technique in nutrition, so long will it be necessary to specialise in this direction. Remedy for this over-specialisation is a complete knowledge of the basic principles of general nutrition in connection with the changes of form and structure during development.

While the study of pædiatrics in its broadest outlook reaches out into almost every field of endeavour, there are thus some phases that are peculiarly its own. It is often necessary to start with embryology and consider developmental defects and diseases of the fœtus itself in order to fully understand conditions that may ensue after birth.

Of the three great critical periods of life—birth, adolescence, and beginning old age—the first is the most important.

It would take too long to recall all the list of diseases that so well repay special study during the early years of life. Rickets, the commonest developmental disease of infancy, may be particularly mentioned as warranting future study. The susceptibility of infants to bacteria, due to their active metabolism, is shown in many kinds of sepsis, and must always concern the practitioner.

The study and treatment of actual disease is not all that concerns the pædiatrician. No branch of medicine opens out into such a wide field of prevention and sociological investigation. Nowhere does medicine touch life in such a close connection as with the child. Permanent race betterment must be accomplished entirely through the young. Infant mortality is thus a grave and pressing problem for the pædiatrician.

In later years, school hygiene should be regulated more by the pædiatrician than by the politician. Too long sessions, cramped positions from improper chairs and desks, imperfect ventilation, poor lights, and a bewildering variety of studies are all too frequently present, and handicap the child during the school age. Not only health departments, but school boards, and even legislatures, should include competent physicians in their

membership. The pædiatrician is needed to instruct the pædagogue in some fundamentals of child nature and growth. The latter might not fail so frequently if he had the benefit of such instruction.

One of the great services that pædiatrics may render to medicine is in the field of original research. It offers to-day the most promising field for advanced work in scientific and experimental medicine.

All the specialties require a thorough grounding in the underlying principles of medicine. The old idea that work in any specialty should be preceded by wide experience in general medicine still holds. The quick step from medical college to a speciality without this previous experience has proved disastrous. It has produced a group of skilled medical mechanics rather than broad-minded physicians, who can work in a specialty without detaching it too much from all relations to general medicine. Pædiatrics should be one of the broadest of the specialties; it has been aptly described as the specialty of the general practitioner.

The Future of Pædiatrics.—Dr. John Howland (Johns Hopkins University, Baltimore).—The justification for the existence of pædiatrics as a specialty rests largely upon the study of two types of disease—the nutritional diseases of infancy and early childhood, and the infectious diseases, including the exanthemata. The infectious diseases, while common to all ages, are in many instances particularly apt to affect children—at least in cities, where constant opportunity of infection is given. Thus it has come about that at the present time the diagnosis and treatment of measles, scarlet fever, chicken-pox, pertussis and similar diseases is almost entirely in the hands of the practitioners of the diseases of children These two types of diseases, the nutritional and the infectious, belong to the domain of the pædiatrists. The trunk of pædiatrics has, therefore, two main roots.

It seems reasonably safe to maintain that for the future that lies within our horizon the advances that are to be made in these two fundamental departments of pædiatrics, the nutritional and the infectious diseases, will be made with the assistance of chemistry and bacteriology, with their several subdivisions. It is quite evident, also, that chemical methods of investigation in pædiatrics have undergone a considerable alteration, even in the last fifteen years, which is almost the limit of their application. In the last few years great strides have been made in the understanding of the chemical processes of intermediary metabolism, chiefly by means of analyses of the blood. These have been made possible by an elaboration of a number of microchemical methods—methods sufficiently accurate to determine most minute quantities, and yet with a degree of accuracy sufficient for the purpose. With these in hand, studies have been made of fundamental importance It is quite sure that these methods will increase in number and in application, and that the knowledge gained by their means will be much greater than that gained by the older method of balancing the ingesta against the excreta.

The infectious diseases are the other great root of our stem. They are many and vastly important, and yet, with the single exception of diphtheria, they are very improperly understood. Upon the accurate and complete knowledge of their ætiology depends the possibility of successful therapy. So far as we know at the present time, treatment of this class of diseases *must* be with biological products, and until we can separate the offending bacterium or virus, cultivate it, and obtain biological substances detrimental to its life or antagonistic to its poison, we are far from our goal.

In the study of both of these types of diseases, the nutritional and the infectious, specialised knowledge is absolutely necessary; for the former it is largely chemical, with the latter it is largely biological, and this brings up the question—Who is to make these studies? Is it the clinician, trained as the clinicians of the past have been, and as the majority of those of the present generation are? Certainly not. We have been trained, with few exceptions, with but slight emphasis upon the fundamental sciences. We have been trained for diagnosis and for treatment, and, I might say, parenthetically, very imperfectly trained, for without the knowledge of the fundamental sciences diagnosis cannot be sufficiently exact, nor therapeutics sufficiently intelligent. It seems unlikely that the clinician not provided with knowledge of the fundamental sciences will contribute very much to the pædiatrics of the future. The clinician has a most important position in the community to fill, and he fills it well, but the better he fills it the more demands are made upon his time, his thoughts, and his strength. The clinician has always been essentially an observer, and the ground that he must cover has been already covered by generations of shrewd, careful observers, and they have seen, not all, of course, but most, of what appears upon the surface. At the present time one must dig below the surface.

It seems that the contributions are to be made by clinicians, but clinicians trained in a very different way from the way that they have been trained in the past—by those who have, in addition to their medical education, an insight into the fundamental medical sciences, those who have devoted several years, either before or after their medical school years, to routine and research in chemistry, biology, or physiology. Such men, as clinicians, appreciate these problems, which are most necessary and most important for attack. As scientists they recognise the means by which they can be attacked, and discard, or postpone until some further means are provided, the problems for which there are at the present no appropriate methods for study. This seems the hope for the future.

It would be unfortunate to give the impression that the hope for the future lies only in the new information that is to be gained. There is much knowledge at the present time of which advantage is not taken. It should be spread. Our duty is to cure disease. It is also to prevent disease. We may say without exaggeration that the larger part of the distressingly great mortality among infants and young children is preventable, and by methods already known.

What is roughly outlined seems what we are to expect in the way of advance from pædiatrics in the future. The one body of men will increase the knowledge of all diseases to which the young are liable, but chiefly of those that are the foundation of pædiatrics—the nutritional and the infectious diseases—and they will do this largely in hospitals and institutes with special facilities. The other body will, by precept and example, educate those to whom is given the care and rearing of children. For both of these purposes, the investigative and the educational, the organisation is being perfected. There is no justification for dissatisfaction with the outlook. The future is bright with hope.

January the 9th, 1917, Dr. John F. Sinclair, in the chair.

Congenital Pyloric Stenosis.—Dr. Damon G. Ffeiffer.—The patient was a girl, aged 4 weeks, the only child of healthy parents. At birth the

baby weighed 7 lb. 13 oz., and was apparently normal. For the first week the child took the breast, and showed no digestive disturbances. During the second week she began to vomit occasionally. Various formulas were tried without effect, and the vomiting grew worse, while the baby lost weight rapidly. The bowels moved scantily. In the fourth week Dr. Charles A. Fife was called in consultation by the attending physician, Dr. George A. Parker, of Southampton. Visible gastric peristalsis could now be observed at times, but no epigastric tumour was palpable. The child displayed evidence of ravenous hunger, taking food eagerly and sucking its thumbs. With the diagnosis of hypertrophic stenosis of the pylorus the patient was referred to Dr. Pfeiffer, at the Abington Memorial Hospital, for operation. The weight by this time was barely 4 lb. The pulse was exceedingly thin and weak, and the temperature subnormal.

Under ether anæsthesia, a posterior gastro-jejunostomy was made without special difficulty. Hypodermoclysis was given during the operation, and the patient left the table in good condition. She vomited once the following day, and the stomach was washed out, a small quantity of biliary material being obtained. Feedings of whey were begun. The next day the baby showed evidence of excessive weakness, and died a few hours later.

Post mortem the peritoneum was everywhere glistening, and showed no evidence of peritonitis. The gastro-jejunostomy was mechanically satisfactory. The pyloric canal for a distance of about an inch was tightly constricted, as had been observed at operation, by a thickened muscularis, measuring 6 mm. in depth at its thickest part. There was no apparent œdema. The longitudinal incision through this part of the muscularis was made after removal of the specimen, and showed beautifully the distinctness of the separation of the muscularis from the submucosa and the elasticity of the latter, thus illustrating the ease and effectiveness of a Rammstedt procedure, which was considered, but not practised, in this case. It showed also the sharp limitation of the muscular thickening to the gastric side of the pylorus, an important point to observe in performing the Rammstedt operation because of the ease with which the duodenum could be opened.

The case illustrated the fact, which had been pointed out by Holt, Downes, and others, that sudden collapse might occur in these weakened infants, with or without relief of the obstruction, and showed the advisability of resorting to surgical measures at an early period.

In the subsequent discussion Dr. Pfeiffer said that, as in appendicitis, it was often hard to tell what cases would recover without operation. He believed that some cases would be saved by operation that would die under medical treatment. The present case was operated upon because she would undoubtedly have died without operation, and had a small chance with operation. He had consulted many authors, and found that the mortality for medical treatment was often as high as 53 per cent. The mortality in sixty-six cases operated on by Downes in New York was less than 23 per cent.

Thrombosis following Measles.—Dr. J. A. Perkins.—The patient was a girl, aged 6 years, whose family history and past history were negative. Six months ago the child developed measles. Following the attack the mother noticed an internal strabismus and later that the child staggered slightly when she walked. Prior to the attack of measles the child had been quite bright, but since then had been distinctly backward, and until very recently had talked but little. On examination the following salient

points were elicited: A large square head, thick heavy neck, apathetic expressionless facies, convergent strabismus, lateral nystagmus, equal pupils which reacted to light and accommodation, normal reflexes. The intellect seemed impaired and the child was very unresponsive. The gait was unsteady and staggering with a tendency to fall to the left. The feet did not drag.

By spinal puncture 25 c.c. of clear fluid under normal pressure was withdrawn. This fluid had a total cell-count of twenty, of which twelve were polymorphonuclears and eight lymphocytes. There was a marked reduction of Fehling's solution; no globulin. There were no bacteria either in smear or culture. The first Wassermann reaction was a delayed negative, and the second was negative. The von Pirquet was negative. The blood showed 82 per cent. Hb., 4,380,000 red corpuscles, 8400 leucocytes, and a normal differential count. The first urine examination showed a trace of albumin and some hyaline and granular casts, although subsequent specimens were normal. Eye examination by Dr. Shumway showed convergent strabismus of the right eye; the left eye would fix but not retain; the left eye moved outward but not as freely as the right; almost constant nystagmic movements, which were greatly increased on moving to the right or left; the eye grounds were healthy; the pupils equal and responded normally. The condition was probably not paralytic.

Dr. Burr suggested the possibility of cerebellar thrombosi at the time of the measles, although the present condition might be merely the residual effect of a basilar meningitis, and a primary degeneration of the cortex must be considered.

The Barany tests by Drs. Jones and Fisher suggested a lesion of the brain-stem in the posterior aspect of the upper portion of the anterior superior portion of the pons involving the adjacent portion of the anterior superior portion of the cerebellum. During the time that the child was in the Children's Hospital until the present she had shown some improvement, although the gait was still unsteady and there was slightly increased swaying on closing eyes when standing with feet together. The finger to nose test was performed well. The child seemed more intelligent and at times would talk. She had a partial paralysis of the muscles of the right side of the face.

Dr. Spiller suggested hydrocephalus and cerebritis, resulting from occlusion of the aqueduct of Sylvius, which in turn might have been due to a meningitis following occlusion of an artery supplying the part (possibly a thrombus at the time of measles).

An X-ray of the head made by Dr. Bowen was negative except for a slight thickening of the right maxillary sinus.

Dr. Burr said that the case was illustrative of the fact that measles was not without serious consequences.

Malposition of the Colon.—Dr. W. H. Johnson.—The patient was a boy, aged 9 years. The child's mother died of tuberculosis, and although there were four other children in the family living and well, none of them presented any disturbance of the gastro-intestinal tract. The present illness dated back to infancy and was manifested by persistent constipation. Up to the third year castor oil or salines acted satisfactorily if given in large doses. At that time, however, the child went for eight days without a bowel movement. Unsatisfactory stools then resulted from enormous doses of cathartics. Since that time constipation had been growing more obstinate and now the child would sometimes go for a period of two or three weeks

without a bowel movement. During these attacks he did not vomit; his appetite did not fail until about the sixth day, and he suffered from headache and malaise. He did not have fever, and the abdomen was not noticeably distended until the second week. He had epigastric pain. During the intervals he was apparently in good health. At the time of showing the child he had not had a bowel movement for nine days. His abdomen was distended and for the most part tympanitic.

Dr. JOHNSON said that when the abdomen was not distended there seemed to be a slight tenderness over the epigastrium and a palpable mass in the lower right quadrant of the abdomen. The liver and spleen were not palpable. The urine contained an excessive amount of indican. The X-ray report by Dr. Mangus furnished the diagnosis: "The descending and part of the transverse colon appear to be on the right side, probably as a result of a failure of rotation of this part of the bowel. The sigmoid flexure is in the midline and the cæcum is presumably obliterated by the malposed section of the bowel. No kinking of the bowel is demonstrable. The descending and transverse colon are greatly dilated." Dr. Johnson said that the prognosis of the case under medical treatment was very unfavourable.

Feeding in the Second Year.—Dr. MAURICE OSTHEIMER.—As a result of feeding over 600 infants of from 12 to 24 months of age, in the past six years, Dr. Ostheimer believed that the common practice of five or six meals consisting chiefly of milk and broths should be discontinued, and infants given only three meals a day.

The transition from milk to solid food should be gradual; gradually increasing the amount and number of foods given; allowing drinks of milk half-way between meals until the baby took three good meals. All food should be carefully prepared and the baby fed slowly. Nothing to eat was allowed between meals.

The three meals consisted of (1) Breakfast, between 7 and 8, strained cereal; stewed fruit; toast, zwieback or stale bread, with butter; soft boiled egg and milk. (2) Dinner, between 12 and 1 p.m., baked potato; green vegetable; stewed fruit; toast, zweiback or stale bread, with butter, and milk daily; with meat or boiled fish twice a week; and corn starch, custard or milk pudding twice a week. (3) Supper between 5 and 6 p.m., stewed fruit; potato; cornstarch; rice; custard or soft-boiled egg; toast, zwieback or stale bread with butter, and milk.

Abstracts from Current Literature.

Acute Poliomyelitis.

The ætiology of epidemic poliomyelitis (*'Journ. Amer. Med. Assoc.,'* 1916, LXVII, *p.* 1202).—**E. C. Rosenow, E. B. Towne** and **G. W. Wheeler** have isolated a peculiar streptococcus from throats, tonsils, abscesses in tonsils, and from the central nervous system in cases of poliomyelitis. Paralysis has been produced in animals of various species by intravenous and intracerebral injections of this organism and lesions of the grey matter of their nervous system have been demonstrated. From the nervous system of these animals the streptococcus has been isolated in pure culture. The organism is remarkably polymorphous and appears to grow

large or small according to the medium in which it is grown even after passage through a Berkefeld filter. Using the organism in its large form paralysis has been consistently produced in animals known to be insusceptible to inoculation with material from epidemic poliomyelitis as heretofore practised. After paralysis had been produced in a series of three rabbits, the strain caused paralysis and lesions of poliomyelitis in monkeys. It appears that the small, filterable organism which has been generally accepted as the cause of poliomyelitis may be the form which this streptococcus tends to take under anaërobic conditions in the central nervous system and in suitable culture media, while the larger and more typically streptococcic forms which investigators have considered contaminations may be the identical organism grown larger under suitable conditions.

T. R. WHIPHAM.

Experimental studies in the ætiology of acute epidemic poliomyelitis (*'Journ. Amer. Med. Assoc.,'* 1916, LXVII, *p* 1205.)—**J. W. Nuzum** and **M. Herzog** have isolated a similar organism to that described by Rosenow, Towne and Wheeler from the central nervous system, tonsils, mesenteric glands and cerebro-spinal fluid from cases of poliomyelitis, and have produced experimental lesions with it in animals. They, too, have found the organism to be polymorphic. Aerobically it grows large, but under anaërobic conditions it assumes a form so small that it may pass through a Berkefeld filter. In considering this gram-positive coccus in its ætiological relation to acute poliomyelitis it must be remembered that it may act as a carrier of a real ultramicroscopic virus, which, together with this micrococcus, might still be transferred in cultures and be transmitted in inoculations. In tissues from the central nervous system preserved in 50 per cent. sterile glycerine this same micrococcus was alive after a period of thirty-five days, and could be cultivated in pure culture on suitable media.

T. R. WHIPHAM.

Predisposing factors in poliomyelitis (*' New York Med. Journ.,'* 1916, CIV, *p.* 202).—**M. Talmey.**—Pettenkofer held that for every infectious disease predisposing factors were a sure *sine qua non*, thus putting the organism into a place of minor importance. The predisposing factors of poliomyelitis are numerous, otherwise it would not be ubiquitous. One factor Talmey considers is tonsillectomy ; this may act in two ways, first, the trauma, with its effect on mind and body, leaving the nervous system in a condition of weakened resistance. The second way is the removal of a valuable protective substance, the nature of which is as yet unknown, which may act in the manner of ferments. So the tonsil may have the same relation to poliomyelitis as the thyroid to myxœdema and other diseases. The writer suggests further investigation on these lines.

J. PORTER PARKINSON.

Poliomyelitis: some remarks on its epidemiology, pathology, and symptomatology (*' Med. Journ. of Austral.,'* 1916, II, *p.* 423).—**H. D. Stephens** objects to the word infantile paralysis, and adopts the above term. Its normal mode of infection is by the lymph spaces of peripheral nerves, particularly the nasal nerves to the spinal cord or brain. The incubation period is from two days to two weeks, or longer in some cases. Many people may be infected but show no signs of the disease, owing to either enfeebled virus or high resistance of the individual. The disease is transmitted through direct contact with persons suffering from an acute

attack, or from one of the so-called abortive types, or with carriers, and not by flies or vermin. There are eight different clinical types of the disease. (1) A superior encephalitic or cerebral type in which the attack falls on the cerebral cortex. (2) An inferior encephalitis, including bulbar, pontine, and mid-brain forms. (3) A cerebellar or ataxic type. (4) A spinal type. (5) Ascending and descending types (allied to Landry's paralysis). (6) A neuritic type. (7) A meningitic type. (8) An abortive form.

F. R. B. Atkinson.

Afebrile non-paralytic poliencephalitis (*'Arch. of Ped.,'* 1915, xxxii, *p.* 755).—**L. C. Ager** describes a case in a previously healthy male infant, aged 19 months. Projectile vomiting, accompanied by general convulsions, more marked, however, on the right side, were the first symptoms observed. The cerebro-spinal fluid was clear, contained an increased number of large mononuclears, and augmented globulin content. Kernig's sign, and Brudzinski's neck and contralateral signs were present. A diagnosis of tuberculous meningitis was made. Death took place on the fourth day of the disease, but post-mortem no signs of tuberculosis were found. The patient was quite unconscious, the pupils were dilated and did not respond to light, but there was no paralysis. In the second case, in a female aged $2\frac{1}{2}$ years, digestive disturbances were shortly followed by coma. There was a marked tendency to convulsive spasm, but this spasticity largely disappeared if the patient was left undisturbed. The cerebro-spinal fluid was of the same nature as in the case first described. Two c.c. of the cerebro-spinal fluid, followed by three doses of 5 c.c., were injected into the thigh. Improvement as estimated by diminished spasticity and diminution of unconsciousness was noted until the eighth day, when fatal pneumonia ensued. No paralysis except that of the bladder was noted.

Christopher Rolleston.

Epidemic poliomyelitis (*'New York Med. Journ.,'* 1916, civ, *p.* 727).—**W. S. Bryant** speaks of the nasopharyngeal aspects of this disease. Abortive cases and carriers are said to be four or five times as numerous as those with paralytic symptoms. He considers effective treatment of the nasopharynx to be of the greatest importance. He recommends spraying the nose with 1 per cent. cocaine and 1 in 8000 adrenalin to shrink the turbinates, and swabbing the inferior meatus of the nose with hydrogen peroxide. If there be much adenoid tissue he recommends applying nitrate of silver 10 per cent. in children or 25 per cent. in adults; if there be little adenoid tissue a saturated solution of alum is used. The treatment is repeated after four days.

J. Porter Parkinson.

The relation of Landry's paralysis to poliomyelitis (*'Med. Record,'* 1915, lxxxviii. *p.* 436).—**M. Neustaedter** comes to the following conclusions: (1) Landry's paralysis is a clinical entity with varying pathological changes. These may be primarily in the peripheral nerves and confined to them, or they may be myelitic only, and again neurocellular. (2) Poliomyelitis is a pathological entity with varying symptom complexes. There may be flaccid paralysis with muscle atrophy, or spastic paralysis, or cranial nerve involvement, also ataxias and tremors, or mixed types.

J. D. Rolleston.

A reaction of immunity in acute poliomyelitis (*'Journ. Amer. Med. Assoc.,'* 1916, lxvii, *p.* 1935).—**G. Mathers** and **R. Tunnicliff** have made

experiments which indicate that specific opsonin for the poliomyelitis coccus found in the brains and cords of patients dead of acute poliomyelitis develops during the course of the attack. This opsonin usually appears in the blood during the second week of the disease. That it is specific seems likely, since no change was observed in the opsonin for *Streptococcus pyogenes* or *Streptococcus viridans*. The increase in opsonin for the poliomyelitis coccus during the course of an attack of acute poliomyelitis suggests strongly that the organism is of importance in the causation of the disease. Furthermore, it was found that the serum of rabbits immunised against different strains of poliomyelitic cocci contains antibodies in high concentration, especially opsonin, which are apparently specific for the poliomyelitis organisms. If the results are verified, the outlook for the development of a specific immune serum will seem encouraging. T. R. WHIPHAM.

Bacteriological findings in cerebro-spinal fluid in poliomyelitis (*'Journ. Amer. Med. Assoc.,'* 1916, LXVII, *p.* 1437).—**J. W. Nuzum** makes a further report on cultures obtained from the cerebro-spinal fluid in cases of poliomyelitis. In forty-five out of fifty cases studied a minute micro-organism, germ-positive, and arranged in pairs, clumps or short chains was obtained on media composed of ascites dextrose broth, ascites broth, human ascibic fluid, and ascites broth to which a sterile piece of rabbit's kidney was added. The organism when injected into monkeys, young lambs, and rabbits, either intraperitoneally, intravenously, or intracerebrally has produced flaccid paralysis of the extremities, and in a considerable number of cases the typical histological change in the central nervous system which characterise the disease in man. Paralysis has been produced by cultures in the fifth generation and by subcultures two weeks old. The same micro-organism has been recovered in pure culture in nearly every instance from the cerebro-spinal fluid and from the central nervous system of the paralysed animals at necropsy, and in sections of their spinal-cord and medulla the organism has been visible in the grey matter in pairs and short chains. The organism appears to exist in the cerebro-spinal fluid for a considerable time as it was isolated in two cases fifty-nine and sixty days after the onset of the paralysis. T. R. WHIPHAM.

Laboratory aids in the diagnosis of poliomyelitis (*'New York Med. Journ.,'* 1916, CIV, *p.* 167, and *'Arch of Ped.,'* 1916, XXXIII, *p.* 595.—**J. B. Neal** The most trustworthy and valuable aid in the diagnosis is the examination of the spinal fluid. This is increased in amount, generally clear or only slightly cloudy, showing a slight to moderate increase in albumin and globulin, a good reduction of Fehling, and a varying cellular increase, mostly mononuclear. Sometimes there are large mononuclear cells which Neal believes to be in a measure characteristic of poliomyelitis. There are two rare types, one is the hæmorrhagic and the other the syndrome of Froin, in which the fluid has a characteristic yellow colour and coagulates spontaneously. The fluid of purulent meningitis shows a varying degree of cloudiness, a greater increase of albumin and globulin, and a poorer reduction of Fehling. The cells are 90 per cent. polymorphonuclears, and the organism is generally found. In tuberculous meningitis the fluid is clear and increased in amount. The albumin and globulin are increased. The reduction of Fehling's solution may be good. The cellular element is less than in poliomyelitis, but, like the latter, it is a mononucleosis as a rule, though in some stages it may be polymorphonucleosis. J. PORTER PARKINSON.

Infantile paralysis: diagnosis, prognosis, prophylaxis, and medical treatment (*'Med. Journ. of Australia,'* 1916, II, *p.* 426).—**A. J. Wood.**—The chief difficulty in diagnosis occurs before there is any paralysis. The most valuable procedure is lumbar puncture and examination of the fluid which is under high pressure, usually clear, and often shows on standing a fibrin web formation. There is a slight or moderate increase of albumin, globulin, and cells. Reduction of Fehling's solution is rapid. The cloudy poliomyelitic fluids present a polymorpho-nucleosis which is usually 60 per cent. but may reach 90 per cent. As a rule 80 per cent. of the cells are mono-nuclears. In some cases the fluid may be yellow, coagulating spontaneously. In tuberculous meningitis, the fluid closely resembles that of poliomyelitis, and if no tubercle bacilli are to be found, only animal inoculation will clear up the diagnosis. *Differential diagnosis*: Two conditions accompanied by paralysis in infants should be remembered (1) Scurvy. This rarely occurs under 9 months of age, and the condition of the gums and history of the diet are distinctive. (2) Syphilitic epiphysitis. This is usually seen a few weeks after birth. Rapid recovery occurs under mercury. Diphtheritic paralysis and peripheral neuritis may also cause errors. *Prognosis*: The tendency is towards recovery, In epidemics the percentage of deaths varies from 5 to 20 per cent. It is worse for adults, adolescents, and older people, than for children between 2 and 11 years. Only a few are left hopelessly crippled. Improvement goes on from year to year. Marked pain and hyperæsthesia have been pronounced in cases of severe paralysis which has cleared up with difficulty, or failed to disappear. *Prophytaxis*: Isolation is of the utmost importance. Antiseptic mouth washes, gargles, eye douches, and nasal sprays and absolute cleanliness of the hands should be carried out by all in contact with the patients. *Treatment*: Lumbar puncture, sometimes several times repeated, often relieves the signs of hydrocephalus. Normal horse serum and normal human serum in 15 minim doses, administered intrathecally, blood serum from convalescents, immune serum from monkeys who have had the disease, have all been tried, with varying results. Epinephrin intraspinally (2 ccm. of a 1 in a 1000 epinephris solution every six hours) has been tried by Meltzer. Hexa-methylanin is the only drug that has shown itself of any use in monkeys, and the results from it are slight. F. R. B. Atkinson.

Nervous and Mental Diseases.

Potassium permanganate test in cerebro-spinal fluid (*'New York Med. Journ.,'* 1915, CII, *p.* 1052).—**A. I. Rubenstone.** In cases of meningeal irritation without true meningitis the microscopic and chemical examinations of the fluid give very doubtful results. In such cases the writer considers the corroborating value of this test. In true meningitis the cerebro-spinal fluid turns potassium permanganate solution bright yellow almost immediately, but in simple cases of meningeal irritation the reagent is decolourised only after two or three minutes, the length of time required being an index of the severity of the process present. Normal cerebro-spinal fluid produces no change in five minutes. J. Porter Parkinson.

The Lange gold chloride reaction in the cerebro-spinal fluid of infants and young children (*'Am. Journ. Dis. Child.,'* 1915, IX, *p.* 17).—**C. G. Grulee** and **A. M. Moody** carried out this test in eighteen cases of

congenital syphilis, in pneumococcus meningitis, septic meningitis, hydrocephalus, cretinism and other conditions, cerebral and otherwise. Their conclusions were as follows: (1) In congenital syphilis the cerebro-spinal fluid reacted to the colloidal gold chloride solution always in the lower dilutions, and with a marked degree of regularity, strongest in the dilutions 1 : 40 and 1 : 80. (2) In a small group of cases of congenital syphilis the reaction was similar to that of paretic dementia. (3) The reaction obtained in congenital syphilis was most nearly approached by conditions which showed slight inflammation of the meninges or brain, and were not likely to be confounded with congenital syphilis. (4) The reaction in tuberculous meningitis was found most intense in dilutions of 1 : 160 and 1 : 130. The more rapid the course the more apt was the reaction to occur in the higher dilutions. (5) The statistics showed that the gold chloride reaction was of value only as an aid to diagnosis (*cf.* British Journal of Children's Diseases, 1915, xii, *p.* 254). J. D. Rolleston.

On cholesterin and urea in the cerebro-spinal fluid of sick children (*'Riv. di Clin. Pediat.,'* 1915, xiii, *p.* 736.)—**L. M. Spolverini** gives tabular results in 63 cases. With regard to the cholesterin content the results in an overwhelming majority were negative. In the few cases where it was present it was met with in very small quantities, from a maximum of 0·050 grm. per 1000 c.c. to a minimum of 0·036 grm. As a rule it is absent in diseases during the acute stage (tuberculous and meningococcic meningitis), including those not localised in the central nervous system (broncho-pneumonia, pneumonia); the exceptions are few and rare in tuberculous meningitis, there being one exception only out of 15 cases. The few cases where it was present, even in small quantities, were chronic forms, notably hydrocephalus and rickets, and in the periods of resolution or convalescence of some acute diseases, notably broncho-pneumonia. Intraspinal or intra-ventricular injection of anti-meningococcic serum caused no variation in the amount of cholesterin before or after treatment. With regard to amount of urea, this was small, even in acute diseases, varying within the normal limits of 0·15 grm. to 0·50 grm. Only in one instance did it rise to 1 grm., a case of exacerbation of chronic nephritis. Further the experiments showed clearly that as the disease became more serious the amount of urea was proportionately increased, even reaching double that found in the first analysis. Hence observations of this kind are of practical utility from a prognostic point of view. It was not possible to trace any special relation between the quantity of cholesterin and that of urea. Vincent Dickinson.

A method of estimating the amount of reducing substances in the cerebro-spinal fluid (*'Riv. di Clin. Pediat.,'* 1915, xiii, *p.* 515).—**A. Bardisian** recommends the use of methylene blue to estimate the amount of glucose present in the cerebro-spinal fluid, which has a diagnostic importance since it is said to be diminished or almost absent in meningitis, increased in cerebral hyperidrosis, diabetes, epilepsy, etc. The amount of fluid obtainable is often not sufficient to admit of the estimation by Fehling's method. In using a solution of 1 in 10,000, a beaker of 250 c.c. is taken, filled with water, which is kept at the boiling point. Into this is plunged a glass tube, previously washed with distilled water, of the same length as the beaker. One c.c. of the cerebro-spinal fluid is poured into it and then, only with the object of increasing the volume of liquid to render the reaction

more evident, 2 c.c. of distilled water are added and finally a few drops (5–10) of normal soda solution or carbonate of potash, and lastly from a graduated pipette drops of the methylene blue solution are added. Each drop is discoloured and the fluid remains perfectly clear, but after a short time, according to its richness in reducing substance, the drops are no longer discoloured and the operation is completed as soon as the mass of fluid is slightly stained blue. The author found that 1 c.c. of a 1 per cent. glucose solution corresponded to 2·50 c.c. of methylene blue solution 1 in 10,000. Hence by a simple calculation from the quantity of methylene blue used, the quantity of reducing substance in terms of glucose can be found. For example, if 2 c.c. methylene blue solution were used the cerebro-spinal fluid under examination would be equivalent to an amount of reducing substance corresponding to grm. 0·80 per cent. of glucose, since $2{\cdot}50 : 1 = 2 : x$. The methylene blue solution must possess the following properties: (1) It must not be discoloured by the addition of hydrochloric acid; (2) it must be changed to a yellowish-green by sulphuric acid; and (3) it must be decolourised by zinc and restored to its blue colour by the addition of perchloride of iron. The author controlled the results arrived at by this reaction with those obtained by Fehling solution both in solutions of glucose and in cerebro-spinal fluid, and found that they were in perfect agreement. VINCENT DICKINSON.

Meningitis serosa (*'Dub. Journ. Med. Science,'* 1916, I, *p.* 1)—**T. Gillman Moorhead.**—It has for long been recognised by clinical observers that during the course of acute infective diseases meningeal symptoms may arise, and as a rule these symptoms have been regarded in a rather vague way as being caused by a vascular congestion of the cerebral meninges brought about by the toxins of the bacteria of the disease in question. Accumulating evidence in various infections seems to bear out this view, and more particularly to suggest that the congestion is often accompanied by an actual serous exudate, the presence of which may lead to acute symptoms of increased intracranial pressure. They are, in fact, cases of serous meningitis. Clinically a large variety of cases is met with, but they may be divided into (1) acute and (2) chronic types. In all cases some toxin—bacterial or otherwise—can be proved to be present. In Group 1 a most important type is that associated with middle-ear diseases and resembling in many respects cerebral abscess. Another type includes the large group of cases associated with infectious diseases to the more acute forms of which the term meningism is often applied. The histories of two cases in children are quoted. Case 1, a girl, aged 13 years, was found to be suffering from severe optic neuritis. She was a well-developed child, but was a little slow in answering questions, and her memory was rather defective. In addition to the optic neuritis there was distinct nystagmus, but no other physical deformity except complete absence of knee-jerks. She ate well and her bowels acted normally. The urine and blood were quite normal, and both a tuberculin and a Wassermann test proved negative. A provisional diagnosis of intracranial tumour was made. For the first couple of days the optic neuritis appeared to increase, and trephining was seriously contemplated with a view to preserving her sight, although no growth could be localised. However, after this increase the neuritis became stationary, and later subsided, and after a lapse of six weeks the sight and the appearance of the fundus were both perfectly normal. The nystagmus persisted for about a week, but up to the present date (almost three years after she was first seen)

the knee-jerks have been completely absent. The interest in this case consists in its extreme resemblance to a case of intracranial tumour. Operation had almost been decided on with a view to saving the child's sight, when a slight functional improvement in the vision was observed. The improvement persisted, and bit by bit it became plain that the case was not one of intracranial growth, but rather a delayed serous meningitis due in all probability to an influenzal attack which she had a month previously. Case 2 was a girl who had become unconscious two days previously. She had been quite well up to ten days before, when she got an attack of acute tonsillitis accompanied by general febrile disturbance and pain in the limbs. This attack lasted only for a couple of days and she then returned to her ordinary life, but suffered from headaches and did not feel very well. Two days before he saw her she woke with a bad headache, vomited after breakfast, talked in a rather confused way, and said her sight was dim. She, however, insisted on getting up and going out, although she was told that her colour was yellowish and that she might be getting jaundice. After a short walk she returned home, with difficulty got upstairs, got into bed, and almost immediately became quite unconscious. Two days later he found her deeply jaundiced and absolutely unconscious. Her pupils were dilated but reacted to light; her head was retracted and her neck stiff; the legs and arms were flaccid and the knee-jerks were obtained with difficulty; the breathing was sighing, and her pulse slow; her sphincters were completely relaxed and she swallowed only with difficulty. At first sight the case seemed possibly one of acute yellow atrophy of the liver, but analysis of a small catheter specimen of urine did not bear out this view. There was, moreover, no diminution in size of the liver. Bacteriological and other examinations of the blood showed nothing abnormal. Treatment was without the least apparent result, and on the next day, after a bad night, the patient's condition seemed extremely serious. The muscles of the back were now rigid and there was a tendency to backward arching. On lumbar puncture the cerebro-spinal fluid, which spouted out under apparently great pressure, was quite normal except that it gave no reduction reaction—a point that has been noticed in connection with similar cases. Shortly after the puncture the symptoms began to improve; breathing became easy and the pulse more regular, and in a few hours slight consciousness returned. Within twenty-four hours she was able to talk a little and to ask for nourishment, and from that on recovery, though somewhat slow, was uneventful. The case seems to have been one of serous meningitis, and probably both jaundice and meningitis were infective in origin and due to the same cause. Under Group 2 are included cases of chronic hydrocephalus, in which no toxic element can be discovered, and cases in which the presence of some toxin is capable of demonstration.

J. Allan.

Streptococcic meningitis (*'Journ. Amer. Med. Assoc.,'* 1915, lxiv, *p.* 2054).—**W. E. Leighton** and **J. A. Pringle** report two cases of streptococcic meningitis, one of which was a girl, aged 8 years, who was admitted into hospital with signs of mastoiditis. Evidence of meningitis supervened three days later. Lumbar puncture was performed and the cerebro-spinal fluid was found to contain many leucocytes and streptococci. Lumbar laminectomy was performed and the spinal canal was drained. A good recovery was made in this case as in the other, a man, aged 65 years, which was treated in a similar manner.

T. R. Whipham.

Cerebro-spinal meningitis from streptothrix (*'La Pediatria,'* 1915, xxiii, *p.* 711).—**G. Rutelli** describes the case of a girl, aged 6 months, admitted with symptoms of cerebro-spinal meningitis. Ten c.c. of fluid obtained by lumbar puncture was turbid and formed dense white clots after a few minutes. The microscope showed numerous white cells, the neutrophile polynuclear leucocytes being prevalent, several erythroblasts and abundant filamentous organisms resembling streptothrix. An emulsion of this organism injected into the peritoneum of some white mice caused death in three days. The patient's blood did not agglutinate them. A second lumbar puncture gave identical results. Urotropine was given in doses of 1 grm. daily. The temperature continued irregular and intermittent but never rose above 38·5° C. The sequel of the case is unknown as the parents removed the child from the hospital.

VINCENT DICKINSON.

Multiple sclerosis as a complication of whooping-cough (*'Riv. di Clin. Pediat.,'* 1915, xiii, *p.* 773).—**G. Zamboni.**—A girl, aged 5½ years, was attacked with whooping-cough which ran a regular course for 4 months and then became more violent, the paroxysms being accompanied by hæmorrhage from the mouth and nose. After a further 3 months psychic disturbances, scanning speech and difficulty in walking were noticed. Other symptoms characteristic of multiple sclerosis then developed. Treatment with iodides resulted in an increase of more than 1 kilo in weight in a month, after which the patient left the clinic. VINCENT DICKINSON.

Multiple abscesses of the brain in infancy (*'Arch. int. Med.,'* 1916, xvii, *p.* 591).—**J. B. Holmes** records a case in a male infant, aged 23 months. The symptoms were more of chronic internal hydrocephalus, but the phenosulphonephthalein test showed that chronic internal hydrocephalus of the communicating type was not present. The condition found post-mortem resembled closely that of multiple pyæmic abscesses of the left hemisphere. It was not possible, however, wholly to exclude multiple tubercles which had undergone puriform softening. Microscopically the case was noteworthy in the unusual number of Gluge's corpuscles.

J. D. ROLLESTON.

A case of ependymitis in a child (*'New York State Journ. Med.,'* 1916, xvi, *p.* 148).—**A. C. Snell** and **J. Raby** report this case in a boy, aged 11 years. The diagnosis of ependymitis was made: (1) Because the symptoms present were those described by Delafield. (2) Because tuberculous meningitis was ruled out thus: (*a*) Patient lived; (*b*) cell count too low; (*c*) no tubercle bacilli found; (*d*) negative von Pirquet. (3) Because syphilis was ruled out thus: (*a*) Negative Wassermann on blood and spinal fluid; (*b*) no evidence of clinical history of it. (4) Because the eye conditions evidently were caused by pressure of the fluid, as the subsequent improvement after tapping proved. (5) Because there was no evidence or clinical history of any of the acute exanthemata or of typhoid fever. The point of particular interest in this case was the fact that a single lumbar puncture was directly followed by a complete cure of all symptoms with full preservation of perfect visual acuity. The preservation of perfect vision was due in large measure to the early diagnosis, and to the prompt relief of the intra-ventricular pressure, which had not remained for sufficient time to cause secondary changes within the eyeball. J. ALLAN.

A case of brain tumour in an infant (*'New York State Journ. Med.,'* 1916, XVI, *p.* 261).—**G. A. Marion** gives in detail the clinical history of a male infant, aged 1½ years, in whom after death a tumour about the size of an English walnut was found between the two optic thalami and was declared to be a glioma. The most striking features in the case were: (1) Absence of cells at all stages. The length of illness also excluded tuberculous meningitis; (2) the misinterpretation of radiographs—mistaking a normal line of ossification for a fracture; (3) the apparent discrepancy in the two examinations of the eye grounds. Early in the course of the disease the intracranial pressure became great, the jagged edges of the sutures of the cranium held fast, and œdema of the optic discs appeared. Later, the pressure increasing, the grip of the suture lines was broken, the amount of pressure relieved and the choked disc disappeared. J. ALLAN.

Tumours of the third and fourth ventricles (*'Journ. Amer. Med. Assoc.,'* 1916, LXVII, *p.* 1423).—**P. Bassoe** reports four cases of cerebral tumour in children. CASE 1.—A boy, aged 14 years, with rather precocious genital, and hairy development suggesting hyperpinealism. Two months previous to admission he had for a time suffered from headaches. Subsequently he suddenly became blind and had an epileptiform attack. He was drowsy and apathetic; the pupils were equal, dilated and inactive; the ocular movements, especially on the left, were limited, and there was bilateral choked disc with hæmorrhages. The gait was unsteady with a tendency to fall backwards, and all the extremities were ataxic. The facial muscles were weak, and on the left side pain sense appeared to be diminished. The knee-jerks were absent as was the left ankle jerk no Babinski's sign. A diagnosis was made of tumour in the region of the corpora quadrigemina or pineal body, although a cerebellar site could not be excluded. Post-mortem.—A tumour, which proved to be apparently a glioma, was found filling the third ventricle and causing a bulging in the region of the pineal body. CASE 2.—A boy, 2½ years old, was taken ill ten weeks previously with persistent vomiting, slight fever and headache. Strabismus and nystagmus had been noticed but there were no convulsions. There was slight bilateral papillitis; no Kernig's sign; no rigidity; knee and ankle jerks weak, and doubtful Babinski's sign on the left. The cerebro-spinal fluid escaped under pressure on lumbar puncture and was cloudy with increase of both polymorphonuclear and mononuclear cells, chiefly the former. No organisms were found. As tuberculosis was suspected a guinea-pig was inoculated, but it did not develop the disease. Slight rigidity of the neck, and on the left a doubtful Kernig's sign and a distinct Babinski's followed, though the headache was less and the vomiting had ceased. The cerebro-spinal fluid gave a weakly positive Wassermann and Lange gold tests. Under mercurial treatment the patient continued to improve, and, though the blood gave a weakly positive Wassermann, the Lange test was negative. Headache, however, returned with marked ataxia and frequent vomiting. Relief was afforded by lumbar puncture, the Wassermann reaction being now negative, but the patient died suddenly without further symptoms. At the necropsy a large glioma was found in the fourth ventricle breaking through and almost surrounding the pons. CASE 3.—A girl, aged 5½ years. Soon after an attack of measles at the age of 4, she began to stumble and to turn the eyes to one side. Headaches and optic neuritis developed, and cerebellar tumour was diagnosed. The child was drowsy; pupils equal and reacting normally; tendon reflexes

increased; legs spastic with bilateral ankle clonus and Babinski's sign. Operation was advised, but the patient died before the dura was opened. Post-mortem.—A small glioma was found in the upper part of the fourth ventricle with marked hydrocephalus. Case 4.—A boy, aged 5 years, began to suffer from headache six months previously; he grew fat and the genitals became smaller. A tendency to stumble and papillitis supervened. The child rapidly became blind and two convulsive seizures occurred. The Wassermann test was negative in both the blood and spinal fluid, the latter being also free from cells. The patient was very weak; pupils equal and dilated; rotatory nystagmus upward and to the left; apparently slight paresis of right side of face and right arm; knee jerks absent, ankle jerks slightly increased, bilateral Babinski's sign; paresis of leg muscles. Right subtemporal decompression was performed, which was followed by general twitchings, hyperpyrexia and death. A tumour, said to be a small round-cell sarcoma, was found filling the fourth ventricle and causing hydrocephalus. Two other cases of glioma in the fourth ventricle, accompanied by mental symptoms in adults, are also recorded.

T. R. Whipham.

Spastic paralysis in children (*'New York Med. Journ.,'* 1916, ciii, *p.* 495). — **J. Grossman.** — Intracranial hæmorrhage may occur during delivery, prolonged or apparently normal. In the majority of cases the blood may be absorbed without producing symptoms. The hæmorrhage takes place at the vertex about the two paracentral lobules and may involve one or both convexities. The symptoms do not always point to brain disease. There may be severe asphyxia, very feeble respiration and a fall of temperature, and perhaps convulsions. In other cases there are chiefly convulsions or spasms. In some cases interference with dressing or bathing may be the first evidence of spastic paralysis, in others delay in sitting and walking may be seen. The possibility of syphilis as a cause must always be respected. Subtemporal decompression is useful when the ophthalmoscope shows signs of increased intracranial pressure. J. Porter Parkinson.

Acute cerebellar ataxia in children (*'Am. Journ Med. Sci.,'* 1916, cli, *p.* 24).—**J. P. C. Griffith** records a case in a girl, aged 5 years, in which the symptoms developed rapidly without discoverable cause unless possibly she had suffered from influenza. The other noteworthy features were the very uncommon degree of nystagmus, the ataxia of the extremities, disturbance of the sensorium, affection of speech, slight increase of reflexes and complete recovery within a month from the onset. Griffith has collected 17 similar cases from the literature. J. D. Rolleston.

A case of hydrocephalus (*'New York State Journ. Med.,'* 1915, xv, *p.* 408).—**A. W. Armstrong** reports this case in a child, aged 7 months. The infant was delivered by means of forceps, weighed 7½ lbs. at birth, and nothing abnormal was then noted. The mother's history showed that she had been subject to some kind of convulsions, probably not epileptic. The father had a negative history with the exception of specific urethritis during the year previous to the baby's birth. When the baby was four days old he refused to eat and regurgitated some curds, the stools were green in colour and contained curds; his weight decreased to 7 lbs. and the rectal temperature was 99·8° F. On the fifth day he cried almost constantly and the temperature rose to 101·6° F. The symptoms of intestinal infection

continued until the fourteenth day, when symptoms of meningitis developed. Opisthotonos was the first symptom, and during the next three days frequent general convulsions developed, becoming almost continuous on the eighteenth day. Following this the baby seemed to improve. When about five weeks old he became drowsy, sleeping almost constantly for nearly seven days, after which it was noticed the head began to enlarge out of proportion to the body. This has slowly progressed and the maximum circumference of head at age of 7 months is 26·75 in. Wassermann reaction and luetin test negative. The child had meningitis following intestinal infection at a time when there was no apparent abnormality of the skull. It seems quite probable that at this time something happened to obstruct the outflow of the cerebro-spinal fluid and that the case is one of internal hydrocephalus of the obstructive type. In making the pheno-sulphonephthalein test by injecting the colouring material into the ventricle and allowing the cerebro-spinal fluid from a lumbar puncture to drip into an alkaline solution, none of the material was recovered in a period of twenty minutes, thus indicating the absence of free communication between the ventricles and the spinal canal. The author does not consider the case a favourable one for operation.

J. Allan.

Giant hydrocephalus (*'Los Progresos de la clinica,'* 1916.)—**C. S. de los Terreros** records a case in a female infant, aged $3\frac{1}{2}$ months, in whom hydrocephalus developed at the end of the first month and gradually increased. The maximum circumference of the skull was $55\frac{1}{2}$ cm. as compared with 45 cm., the normal measurement at the end of the first year (Vargas). The measurement from one mastoid process to the other was 35 cm. The child had never shown any symptoms such as contractures or localised or general convulsions, but had taken the breast well and appeared intelligent. There was no history of syphilis in the parents and the Wassermann and Nonne-Apelt reactions in the cerebro-spinal fluid were negative.

J. D. Rolleston.

Sensory disturbances in diphtheritic paralysis (*'Jahrb. f. Kinderheilk.,'* 1915, lxxxii, *p.* 476).—**Z. Barabás** records nine cases in children aged from $2\frac{1}{2}$ to 9 years, to show that sensory disturbances consisting in either diminution or complete loss of sensibility to pain with preservation of other forms of sensibility frequently occurs in diphtheritic paralysis. This loss is only temporary, and, with improvement of the clinical symptoms, sensibility to pain gradually returns. No conclusions as regards prognosis could be drawn from these sensory changes.

J. D. Rolleston.

Chorea (*'Glasg. Med. Journ.,'* 1915, i, *pp.* 259, 341, 414).—**Ivy MacKenzie,** after some remarks on the nomenclature of the disease, discusses the ætiology. A review is given of a series of sixty-four cases of chorea, the cases being grouped as follows: (1) Average types of chorea; (2) chorea associated with pregnancy; (3) chorea associated with epilepsy; (4) chorea associated with organic brain disease; (5) chorea associated with neurosis; (6) chorea associated with mental deficiency or dementia. Short clinical histories of two or three cases in each group illustrate the different types. Among the points discussed are: (*a*) Chorea and paralysis; (*b*) rheumatism and chorea; (*c*) cardiac disease and chorea; (*d*) nervous disease and chorea; (*e*) the pathology of chorea; and (*f*) chorea as a functional disease. Regarding treatment the author points out that, like so

many other diseases, the treatment of chorea has developed along empirical lines, associated often in an accidental manner with some current theory as to the origin of the disease. There can be no doubt, for example, that sodium salicylate and aspirin, the most useful drugs in rheumatism, prove efficacious in some cases of chorea. The rheumatic origin of chorea was undoubtedly responsible for the use of these drugs, but there are cases of chorea in which there is not the slightest evidence of rheumatism where aspirin has a very beneficial effect. Antipyrin, in large doses, is also foun to have good results in some cases, and, so far as drug treatment is concerned, the author has obtained the best results with aspirin and antipyrin. In some cases arsenic was administered in the form of Fowler's solution, but the results cannot be regarded as convincingly favourable. In some cases treated with salvarsan there was undoubtedly a good effect, and salvarsan has been found to have a very stimulating effect on the nervous system in many forms of functional nervous disorder. In the more violent cases hyoscine had to be used to produce rest, and in some adult cases, where there was severe mental excitement, par aldehyde in two-drachm doses was given to produce sleep. The administration of drugs, however, covers only a very small part of the treatment. Physical and mental rest is necessary; baths at 99° to 100° F. for a quarter of an hour should be given twice daily. Patients should have light diet and plenty of milk to drink, and the bowels should be kept well regulated with calomel and mild salines. In those cases which have recovered from an attack of chorea the surroundings should be so ordered as to render it unlikely that a recurrence should take place. Prophylaxis is important. J. Allan.

Chorea (*'New York Med. Journ.,'* 1916, ciii, *p.* 1018).—**M. Grossman,** after discussing the symptoms, deals with the treatment as follows: (1) Hygienic: Bed is necessary in all acute cases. Freedom from any mental stress or excitement is needed. Tepid douches or packs may calm excitement. (2) Medicinal: Salicylate is indicated in all cases with a rheumatic history. Arsenic is valuable. Bromides and chloral are useful when there is marked motor unrest. (3) Re-education: Breathing exercises using chiefly the diaphragm. Passive movements of the limbs. Later active movements with slight resistance. Re-education of movements is valuable. The author attaches great importance to these various exercises which he describes in much detail. J. Porter Parkinson.

Causes of chorea (*'Arch. de Méd. des Enf.,'* 1915, xviii, *p.* 517).—**J. Comby** insists that a slight acute encephalitis is the anatomical substratum of this disease. Out of 39 cases, in 6 evidences of hereditary syphilis were forthcoming, 7 of the 39 gave positive Wassermann reactions, 4 gave feeble or doubtful reactions, and 27 gave negative reactions. Clinical results do not give any satisfactory proof that the disease is syphilitic. Twenty-four of the 39 reacted positively to von Pirquet's test, but this was only a coincidence as tuberculosis is found in over two-thirds of hospital post-mortems. Evidence of articular rheumatism was only present in 6 cases and endocarditis in 8. In one case in every three evidences of rheumatism are forthcoming, an exactly similar result to that obtained for syphilis. Rest, milk diet, and arsenic in gradually increasing doses are strongly advocated. Christopher Rolleston.

An analysis of sixteen cases of chorea and motor tic (*'Edin. Med. Journ.,'* 1915, ii, *p.* 333).—**J. E. Middlemiss** here uses the term "chorea"

to connote the presence of sudden inco-ordinated and involuntary movements of a purposeless character, partial or generalised in their distribution, and which cease during sleep. He discusses his cases under the headings: (1) Acute chorea; (2) chronic chorea; (3) motor tic. The most predominant feature noted in this series was the existence in the majority of the cases of a neuropathic basis for the affection, as evidenced by the co-existence of other neuroses or abnormalities in the nervous system, either in the individual case or in other members of the family. It is noteworthy that in only four cases was there an undoubted history of rheumatism. There was a definite history of tuberculosis in six members of the series, all of them being cases of acute chorea. The author is of opinion that the evidence adduced would seem to assign to the neuropathic constitution a preponderating *rôle* in the ætiology of chorea and allied disorders, but discloses strong reasons for differentiating, clinically and pathologically, between the acute type of short duration and the forms associated with states of cerebral subevolution and degeneration, whether these be of the primary neuronic type or sequential to vascular or inflammatory lesions.

J. Allan.

Infantile tetany (*'Dub. Journ. Med. Science,'* 1916, i, *p.* 8).—**Spencer Sheill** points out that tetany is an affection more commonly met with in children than in adults, and this is what one might reasonably expect when the instability and lack of development of the infant's nervous system are taken into consideration. After discussing the predisposing and exciting causes the author records the histories of three cases. It is a fairly generally accepted fact that tetany is most commonly associated with rickets, laryngismus, enteritis, or teething. Convulsions are by no means uncommon in the last two ailments. In tetany there is no loss of consciousness, and the spasms give every indication of being painful to the infant as judged by the facial expression and by the scream. Trousseau's sign is usually present —the muscles being in such an irritable condition that pressure over a nerve trunk will throw the corresponding group of muscles into a state of spasm. Tetany has been mistaken for cerebro-spinal meningitis, but in the former cerebral symptoms, fever and vomiting, are absent. Tetany *per se* is seldom fatal. In concluding, the author asks, "Would it not be safer if we dropped the word tetany and classified such cases as a form of convulsion—without loss of consciousness—occurring as the principal symptom of an underlying but often undiagnosticated disease?" J. Allan.

A case of so-called "tetanism" (*'Edin. Med. Journ.,'* 1916, i, *p.* 51). —**J. S. Fowler** reports this case in a male infant, aged 3 weeks. He was the fourth child, the others being healthy. Soon after birth he was noticed to have a "cold in the head." He had a fit on the twelfth day and a rash appeared on the face on the fourteenth day. When 3 weeks old he was well developed and fairly nourished; weight 7 lb. 14 oz.; head and fontanelle normal; lips markedly fissured; a coppery papular rash present round the mouth and on the buttocks; slight nasal discharge, breathing snuffling; cry hoarse. A fairly large umbilical hernia was noted, and the umbilical wound had not healed, but formed an ulcer about the size of a halfpenny, surrounded by an inflamed zone of skin. On the skin near by was a smaller ulcer covered by a scab. When at rest the infant was extremely rigid, and lay with the arms firmly flexed against the chest and the hands tightly clenched. The back was not arched, nor the head

drawn back, but the legs were extended and the toes curled in towards the soles. When he was moved in any way the spasm increased to a marked degree. It sometimes spread to the facial muscles, causing clenching of the jaws and some pouting of the lips. The legs were more forcibly extended and the toes splayed out fanwise; occasionally slight twitching of the clenched hands and rigid arms occurred. There was no opisthotonos; sucking was somewhat impeded by the cracks and excoriations of the lips, but did not produce trismus. Knee and Achilles jerks and abdominal reflex present; plantar reflex extensor; sucking reflex ("mouth pouting") present; pupils equal, with normal reaction; occasional slight internal strabismus of left eye. Examination of the discharge from the umbilicus for the bacillus of tetanus was negative. The infant improved somewhat as regards the hypertonicity, but did not thrive well, and apparently succumbed to malnutrition some weeks later. The case was chiefly interesting from the diagnostic point of view. The infant was obviously syphilitic, but, in connection with the remarkable hypertonicity, tetanus neonatorum and diplegia had to be considered. The association of spasm and a septic umbilical wound in a young infant suggested the former; but (1) the very slight amount of trismus (not enough to interfere with swallowing); (2) the absence of characteristic pouting of the lips; (3) the absence of implication of the respiratory muscles; (4) the preponderating affection of the limbs; and (5) the chronic course of the disease, negatived this diagnosis. On the other hand, the gradual improvement which took place, and the very marked increase of spasm which resulted from any movement, showed that the case was not one of ordinary diplegia. The author thinks that the case illustrates fairly well some of the characteristic features of exaggerated hypertonus, myotonia, or "tetanism": (1) The hypertonicity (spasm) is remittent, but never altogether disappears; (2) movements cause a marked temporary increase of spasm; (3) with improvement in the general condition, the hypertonicity diminishes and ultimately disappears. A photograph of the infant is appended. J. Allan.

The unconscious mental life of the child ('*Lancet*,' 1916, I, *p.* 733).—**E. Jones,** at a meeting of the Child Study Society, said three critical questions arose in such a study: (1) The extent of the justification in transferring the conclusions based on the abnormal to the normal; (2) the value of the examination of the adult mind as a basis for the study of the mind of the child; (3) the extent of the reliance on the psycho-analytic method of research. The last of these he did not deal with. In reference to the first question, the differences between the working of a normal and of a neurotic mind were only those of degree; disease added no new element, though the grouping of forces might be altered and the relative perspective modified. On the second question, he said the saying "The child is father to the man" was taken seriously by the psycho-analyst. The unchanged form of the infantile mind was buried in the depth of the unconscious, constituting its characteristic. In the psycho-analytic sense the expression "unconscious" meant processes without the conscious *ego*, but dynamically active in the production of external manifestations; those of high significance to the personality, and endowed with certain attributes, sharply distinguishing them from the familiar type of mental function. Many of the child's thoughts could not be communicated because he was unable even to formulate them. From the beginning the child was protected from painful stimuli by the immediate gratification of his wants. There were two

clearly marked stages in mental development—the illusory and the actual—and these were always at work. The control of the primary system of thought by the secondary remained imperfect throughout life. In reference to the question of sexuality in children, there existed a strong tendency to artificially restrict the conception of sexuality. It was ridiculous to suppose the sexual life to be non-existent until it took definite form at puberty; its earlier manifestations were tentative and preparatory. Later there came a process of refinement and the elimination of the discarded elements. The unconscious was naturally unmoral, because it dated from a period preceding knowledge of good and evil, and had remained impervious to such knowledge. All that could be done was to modify the manifestations of the unconscious when they merged into the conscious. Much harm could be avoided by putting into practice some of the elementary principles of medical psychology; there was too much repression of tendencies rather than a seeking to utilise those energies and tendencies for useful social purposes.

J. Allan.

Neurotic manifestations in children (*'Med. Record,'* 1916, lxxxix, *p.* 361).—**A. Stern** describes a case of a girl suffering from a functional neurosis (hysteria), of a boy suffering from a neurosis frequently diagnosed as chorea, but not correctly so, and of a child congenitally mentally defective, who suffered from constant states of fear and would go nowhere unaccompanied with his mother. The treatment in all these cases was to remove the cause and to produce such a change in the child's condition as would enable him to fit in with his environment

F. R. B. Atkinson.

Stammering (*'New York Med. Journ.,'* 1915, cii, *p.* 117).—**G. H. Makuen.**—The predisposing cause is probably congenital and often inherited, being an irritable or hyperæsthetic condition of the psychomotor mechanisms of speech, and there is probably a physical basis which may or may not be demonstrated. Bleumel calls it a "transitory auditory amnesia." Stammering has long been supposed to be due to a faulty action of the laryngeal mechanism of speech, but what causes this? The chief trouble is in the cortical centre representing phonation rather than in that representing articulation. The disability exists chiefly in the auditory region of the cerebral cortex. Stammering in some respects resembles aphasia, and has sometimes developed in adult life in connection with aphasia.

J. Porter Parkinson.

Hysterical mutism in a boy (*'Lancet,'* 1916, i, *p.* 1039).—**A. J. Hall** gives the detailed clinical history of a case in a boy, aged 11 years, in whom was illustrated the cumulative effect of repeated psychical shocks, at considerable intervals of time. It is well to bear in mind that the correct diagnosis of these cases, satisfactory as it may be to the medical man, does not always determine their cure. Such cases are most difficult to deal with and are very liable to relapse.

J. Allan.

Available means for research and prevention in mental deficiency (*'New York State Journ. Med.,'* 1915, xv, *p.* 400).—**M. G. Schlapp.**—The available fields of research and prevention of mental deficiency are all social agencies within the community that are dealing in any way with the mental defectives. To carry out effectively a State-wide campaign for State control, it would be necessary to develop a centralised system of diagnostic clinics

where the mental status of all suspected cases of mental defect could be scientifically determined and registered. It would also be necessary to provide well-equipped schools and asylums for the treatment and training recommended as a result of that diagnosis. Lastly, there ought to be established completely equipped laboratories at these institutions where the pathological findings could be correlated with the clinical symptoms. With clinics, schools, institutions, laboratories, fully equipped and co-ordinated under centralised State control, it should be possible to begin the work of prevention and research. J. ALLAN.

Mongoloid idiocy (*'La Pediatria,'* 1916, XXIV, *p.* 392).—**M. Provinciali** describes two cases. Both were the offspring of elderly parents, thus lending support to the theory of Shuttleworth and Comby. There was no history of chronic toxic infection during pregnancy. Both presented dystrophic ocular lesions. Thyroid treatment produced no appreciable results except to cure the constipation present. VINCENT DICKINSON.

The ætiology of mongoloid idiocy (*'La Pediatria,'* 1916, XXIV, *p.* 403).—**G. di Giorgio** reports sixteen cases which showed parental syphilis in three cases, tuberculosis in three cases, hypertrophied thyroid in mother in one case, malarial infection during pregnancy in one case, paternal alcoholism in three cases, family neuropathics in four cases, and advanced age of parents in one case. Two cases were improved by thyroid treatment.

VINCENT DICKINSON.

Diseases of Muscles.

A case of congenital desmoid tumour of the rectus sheath in an infant (*'Edin. Med. Journ.,'* 1915, II, *p.* 345).—**D. M. Greig** removed the tumour from the sheath of the rectus abdominis in a female child, aged 1 year and 8 months. The tumour in the abdominal wall was first noticed when she was 8 months of age, and it had slightly increased in size since. It was situated to the right and a little above the umbilicus and formed a round, flattened, densely hard tumour, almost an inch in diameter. The tumour had always remained hard, had never been reducible, and never varied during straining; and it appeared to be within the sheath of the right rectus. The tumour was excised, and the pathologist reported: "The growth is macroscopically a hard fibroma, but on microscopic examination is more cellular than a hard fibroma. Remains of muscle tissue are found among the fibres. The suspicion of sarcoma arose, but was dismissed." Brief references to other recorded cases are appended.

J. ALLAN.

A case of myotonia congenita (Thomsen's disease) in a child (*'Edin. Med. Journ.,'* 1916, I, *p.* 216).—**J. Thomson** reports this case in a boy, aged 6 years, who from infancy had had difficulty in opening his eyes; this was especially seen after a fit of sneezing. He began to walk alone at 14 months; and soon after, his mother found that, when he was told suddenly to go anywhere, he could only move very slowly at first, but in a short time could run as fast as the other children. After a fall he was very slow in rising again. Nothing wrong had been noticed in the movements of his arms or hands, and he was a good writer. The unusually large size of his muscles and especially the thickness of his neck had been noticed. There

had been no difficulty with micturition. His intelligence had always been above the average, and he had taken a very good place at school. On examination the patient was found to be a healthy, happy-looking little boy, very well nourished and intelligent. His eyes were normal, but his difficulty in opening them quickly was striking; this difficulty rapidly passed off when the action was repeated several times in succession. There was a similar slowness in the descent of the upper eyelid when he looked down suddenly. This peculiarity also passed off rapidly when the movement was repeated. The voluntary muscles all over the body, including those of the hands, were much larger, and also stronger, than those of a normally well-developed child. The knee-jerks were present, but somewhat difficult to elicit. The thoracic and abdominal organs were normal. A small piece of the left gastrocnemius muscle was excised for examination, and the pathologist reported that the outstanding feature was a marked nuclear increase (sarcolemma nuclear proliferation). The muscle fibres were also slightly enlarged and the longitudinal and transverse striation, so far as could be ascertained, was slightly more evident. Several excellent photographs illustrate the appearances met with in a typical case of this rare disease.

J. Allan.

A family with myotonia, probably intermittent form of Thomsen's disease (*'Amer. Journ. Med. Sci.,'* 1916, cli, *p.* 738).—**N. Toomey** records eight cases, consisting of a father, aged 45 years, in whom the disease began at 14 years; a daughter, aged 18 years, in whom it began at 2½ years; a son, aged 11 years, in whom it began at 5 years; a daughter, aged 9 years, in whom it began at 6 years; a daughter, aged 6 years, in whom it began at 3 years; and three of the father's cousins, who were similarly affected.

J. D. Rolleston.

Congenital familiar paramyotonia. Eulenburg's disease (*'Paris Méd.,'* 1916, vi, *p.* 468).—**A. J. Rayneau** and **A. Boutet** record a case in a soldier, aged 38 years, of this condition, which consists in a transitory muscular rigidity occurring under the influence of cold and damp. His paternal great-grandmother, grandfather, father, two or three aunts, two brothers, and two of his three children, a girl, aged 10 years, and a boy, aged 8 years, showed the same phenomenon in different degrees. The muscles affected were the flexors of the fingers, interossei, and certain muscles of the thenar eminence, as well as the superficial facial muscles, and in a less degree the orbicularis oris and zygomatici. At intervals the masseter and quadriceps cruris were affected for a very short time and in a very slight degree. The symptoms first appeared at the age of 6 to 8 months. At first the muscles of her face alone were affected; but later, when the child began to make more use of his hands, the hand muscles also became involved. None of the muscles showed any hypertrophy. The dominating feature in all was the part played by cold in the production of the symptoms, except in the case of the second child, in which they appeared in the limbs without any change in the external temperature.

J. D. Rolleston.

Congenital and familiar joint hypotonus (*'New York Med. Journ.,'* 1916, civ. *p.* 942).—**H. Finkelstein** describes the case of a child aged 21 months who showed excessive mobility of all the joints without apparent muscular weakness; the mother and grandmother and two uncles had a

similar condition when young. There was no interference with motor power nor loss of reflexes, and the electrical reactions were normal.

J. Porter Parkinson.

Dystonia musculorum deformans: Oppenheim's new disease of children and young adults (*'Boston Med. and Surg. Journ.,'* 1916, clxxv, *p.* 383).—**I. H. Coriat** records three cases, aged 9, 29, and 7 years respectively. All the patients were of Russian-Jewish origin. In two the family history was negative, in the third there were definite neurotic tendencies. The first two cases strongly resembled hysterical dysbasia, but without corresponding sensory disturbances; in the third case there was evidence of some organic nervous disease. All showed a peculiar gait, changes in muscular tonicity and rapid onset of the disease, without any pathological reflexes or changes in sensation (British Journal of Children's Diseases, 1915, xii, *p.* 284). J. D. Rolleston.

The progressive torsion spasm of childhood (Dystonia musculorum deformans).—(*'Journ. Amer. Med. Assoc.,'* 1916, lxvii, *p.* 1430).—**J. R. Hunt** describes the nature and symptomatology of this condition, and gives an account of six cases which have come under his own observation. The affection which was first described by Ziehen in 1910, and later by Oppenheim, is essentially a progressive torsion spasm of the trunk and extremities, often associated with hypotonia and sometimes with movements of a more clonic and rhythmic character, suggestive of chorea and athetosis. Tremor movements are occasionally noted. The characteristic feature is the twisting and tractile quality of the spasm with the attendant distortion of the trunk and extremities, and the bizarre disturbances of posture, gait, and station. It begins insidiously in one of the extremities, but eventually the muscles of the thigh, pelvis and spinal column are always chiefly affected. Sensation is intact, and there are no symptoms of pyramidal tract involvement. It is probably due to an organic affection of the central nervous system, possibly of the corpus striatum, and is essentially a disease of childhood, but has appeared as late as the seventeenth year. It runs a progressive course and then remains stationary. The face and muscles of articulation are not affected except in the terminal stage, when there is involvement of the muscles of the neck. The torsion movements continue, but are diminished during rest, and are greatly increased by any muscular activity; they cease entirely during sleep. In the later stages there is often a tendency to fixation in the distribution of the spasm which predominates in certain muscle groups, and a paradoxical or reverse phenomenon of dystonia, *e.g.* when the foot is in strong plantar flexion an attempt to extend it only increases the already existing plantar flexion, whereas a voluntary effort in the direction of the already existing flexion produces a reverse movement in the opposite direction. This, the author believes, is a pathognomonic sign. The affection is progressive and incurable, and, with few exceptions, has appeared only in descendants of Russian and Polish Jews. T. R. Whipham.

A case of myopathy with myotonic reaction (*'Arch. de Méd. des Enf.,'* 1916, xix, *p.* 532).—**L. Babonneix** records a case of familial pseudo-hypertrophic myopathy presenting the following remarkable features: (1) A transient galvanotonic contraction localised in the muscles of the antero-external group of the right leg. (2) A persistent galvanotonic contraction

in the cervical part of the right trapezius. Cases of this kind are of interest for three reasons: (1) They facilitate an early diagnosis of myopathy, for the myotonic reaction only appears at the onset in apparently healthy muscles. (2) They show that in the early stages the affection is less localised than it appears to be, as alterations of electrical contractility are found in apparently normal muscles. (3) They offer fresh support to the theory which attributes congenital myotonia and myopathy to the same origin.

J. D. Rolleston.

Trichinosis (*'Journ. Amer. Med. Assoc.,'* 1916, lxvi, *p.* 504).—**A. R. Elliott** reports the case of a girl, aged 14 years, who developed abdominal symptoms and persistent muscle soreness on movement and pressure after eating an underdone pork chop. A lumbar puncture was performed, and in the cerebro-spinal fluid three actively mobile trichina larvæ were found. No parasites were found in a portion of muscle which was removed. The child made a satisfactory convalescence.

T. R. Whipham.

Diseases of Uro-genital System.

Renal aplasia and venæ cardinales resistentes (*'Berl. klin. Woch.,'* 1915, lii, *p.* 487).—**K. Secher.**—A female child, born 6 weeks before term, was admitted to hospital for wasting. Three months before death, which took place at the age of 17 months from broncho-pneumonia, a trace of albumin without formed elements appeared in the urine and persisted till death. Post mortem, the right kidney was much enlarged, but of normal shape. The ureter was very broad and the bladder perfectly normal and symmetrical. The left kidney, ureter, and renal vessels were entirely absent. The left suprarenal was much enlarged. The genitals showed a remarkable asymmetry. The right uterine cornu and Fallopian tube were well developed, and the left uterine cornu and tube very poorly developed. Both ovaries were of equal size. The vagina was normal. Instead of one large inferior vena cava there were two vessels which united above the hilus of the right kidney. The right branch came from the medial side of the right iliac artery, crossed behind it, and ran up on the right side of the abdominal aorta. The left branch started from the medial side of the left iliac artery, passed behind it and then upwards along its side and finally crossed the aorta and united with its fellow of the opposite side. The left half of the thorax was filled by an enormously enlarged heart, the base measuring 5 cm. broad and the length being $6\frac{1}{2}$ cm. The lower lobe of the left lung was partly atelectatic. The myocardium was hypertrophied, but otherwise there were no cardiac anomalies. Secher could not explain the cardiac hypertrophy, but suggests that the enlargement of the left suprarenal may have been associated with an increased secretion of adrenalin.

J. D. Rolleston.

Large congenital hydronephrosis in a child aged 6 weeks (*'New York Med. Journ.,'* 1916, ciii, *p.* 547).—**M. S. Kakels** describes the case of an infant whose abdomen was large at birth and gradually increased in size. Fluctuation and a fluid thrill were obtained. The child was not ill and passed urine naturally. At the transperitoneal operation by anterior incision, 900 c.c. of straw-coloured fluid was removed from the sac, which was a very extended pelvis, to which a kidney about three times the normal size

was attached. The ureter was adherent to the sac, and had no dilatation nor stricture, but its entrance to the pelvis appeared to be oblique, and this may have caused the hydronephrosis. J. PORTER PARKINSON.

Multiple ureters with hydronephrosis (*'Journ. Amer. Med. Assoc.,'* 1916, LXVI., *p.* 1088).—**A. H. Peacock** reports the case of a male infant, aged 9 months, in whom malformation of the kidneys and ureters were found. The right kidney was greatly enlarged and the seat of pyonephrosis. From it came two dilated and tortuous ureters; one, draining the lower two-thirds, opened into the bladder in the normal situation, and the other, which drained the upper pole and had its own pelvis, opened into the prostatic urethra. The left kidney was small, but showed dilatation of the pelvis and calices. This also had two ureters—one, rudimentary, arising from the upper pole and ending blindly in the fundus of the bladder-wall, and the other, which was stenosed in the upper part and dilated below, opening normally. The bladder was distended and thickened, and there was a stricture of the urethra in front of the prostate.

T. R. WHIPHAM.

Fibro-adeno-rhabdomyomatous mesothelioma of the kidney (*'Amer. Journ. Obst.,'* 1916, LXXIII, *p.* 1147).—**R. A. Keilty.**—The patient was a boy, aged 3 years. The first complaint was shortness of breath. At the first examination, eight weeks before death, a tumour was found in the left kidney region. This grew rapidly, causing no pain. The urine was normal. At an exploratory operation it was decided not to remove the mass. Post mortem the tumour was found to be part of the kidney, the other kidney was normal, and there were no metastases. The tumour consisted of a dense spherical mass weighing 1150 grm., and about the size of the normal liver. On section it resembled a uterine fibroid, and showed a fairly large area of honey-combed cavity, containing a thin watery substance. Microscopical examination showed the tumour to be a fibro-adeno-rhabdomyomatous mesothelioma. J. D. ROLLESTON.

Malignant tumour of kidney in a boy of 4 years (*'Riv. di Clin. Pediat.,'* 1916, VIV, *p.* 169).—**S. de Villa** describes the case of a boy, aged 4 years, admitted with abdominal enlargement more marked on the right side, where there was a swelling the size of a fœtal head extending from the costal margin, contiguous with the edge of the liver, to the iliac fossa. The tumour was immobile on respiration and elastic with a sense of deep fluctuation. At the operation the tumour ruptured and some detritus escaped into the peritoneum. A few days later there was fever and cough, and a focus of broncho-pneumonia was noticed and thought probably due to metastasis. It cleared up, however, under treatment. Seven months after the operation enlargement of the mesenteric glands was noticed and the patient died shortly afterwards. Histological examination of the tumour showed a sarcoma with round and spindle-cells embedded in fibro-myxomatous tissue. In the author's clinic six similar cases were operated on and recovered completely. VINCENT DICKINSON.

Prolonged anuria with few symptoms (*'Amer. Journ. Dis. Child.,'* 1916, XI, *p.* 367).—**F. E. Clough.**—A girl, aged 7 years, had a mild attack of scarlet fever on March 3, during which she passed on the average only $1\frac{1}{2}$ oz. of urine daily. From March 23 to May 7 the amount ranged from

1 to 4 oz., only once (April 3) did it rise to 30 oz. No albumin was ever detected, and only once two granular casts. There was no œdema nor any symptoms except scanty urine. Treatment was quite ineffective, but after May 9 the amount of urine increased very rapidly and by the end of the following week had reached normal. J. D. Rolleston.

Post-pneumonic nephritis (*'La med. de los niños,'* 1916, xvii, *p.* 63).—**L. C. Astor.**—A boy, aged 2 years, who had had pneumonia two weeks previously, presented an œdematous face, intermittent œdema of the lower limbs, dyspnœa, and constant cough. Pulmonary œdema in the right lung was found on examination. The urine was albuminous. The issue of the case is not recorded. J. D. Rolleston.

Nephritis treated by double decapsulation of the kidneys (*' Edin. Med. Journ.,'* 1916, ii, *p.* 179).—**J. C. Burns** describes a case in a girl, aged 6 years, who was admitted to hospital on account of "swelling of the body and eyes." The indications for operation are: (1) Persistent dropsy; (2) uræmia; (3) excessive albumin; (4) suppression or persistent and notable diminution of the amount of urine voided. The type of cases are acute nephritis or chronic nephritis with acute exacerbations. The best results appear to occur in chronic parenchymatous nephritis in which there is marked anasarca. In this particular case operation was justified on the following points: (1) Failure of a long course of medical treatment; (2) marked dropsy; (3) high amount of albumin; (4) diminution in the urine voided: (5) age of the patient. Operation is contra-indicated in (1) cardio-vascular disease; (2) patients over 50 years of age. The results of the operation on the girl are in keeping with those found in general in such operations: (1) Disappearance of dropsy; (2) increased secretion of urine; (3) great diminution in albumin. After operation there is transient anuria; then in about ten to fourteen days polyuria sets in. In about a month there are decided signs of improvement, which improvement is gradual. Whether permanent cure is established is doubtful, but there is great amelioration of the symptoms. The anæsthetic employed should be ether. J. Allan.

Transient hæmaturia in children (*' Clin. Journ.,'* 1915, xliv, *p.* 396).—**A. J. Cleveland** describes five cases, in three of which there was no other evidence of disease; the other two were ill during the attack, one recovered, and the other died, but the author does not consider the hæmaturia had anything to do with the fatal illness. Various diseases which may cause hæmaturia are considered. F. R. B. Atkinson.

Albumosuria and intestinal toxæmia (*'Clin. Journ.,'* 1916, xlv, *p.* 122).—**A. Graham-Stewart** records three cases in children illustrating this connection. Case 1: Boy, aged 13 years. Twenty-one months previously he developed scarlet fever and acute nephritis; slight albuminuria persisted on and off for eighteen months. He had suffered considerably from constipation and mild intestinal toxæmia. During the continuance of the albuminuria he was carefully dieted, and three months after its disappearance the diet was relaxed. One morning he fainted, and the next day the urine contained a large amount of albumoses. Subsequent examinations showed no trace of them. Case 2: Girl, aged 2½ years, with very offensive motions. The urine gave a marked albumose reaction; there was no

albumin. Under regular use of small doses of calomel, paraffin, and an intestinal disinfectant, the intestinal condition improved, and the albumoses disappeared. Case 3: Girl, aged 8 years, with mucous colitis. The urine contained large quantities of albumoses, which disappeared after two weeks' treatment with calomel and paraffin, with regulation of diet and massage.

J. D. Rolleston.

Alkaptonuria in childhood (*'La Pediatria,'* 1916, xxiv, *p.* 234).—**S. Maggiore** describes the case of a girl, aged 6 years. The urine was clear; specific gravity 1026, acid; albumin, glucose, bile pigment, blood, urobilin, urœrythrin, acetone, and indican absent; urea 11·261 per cent.; Diazo reaction negative. After about three hours' exposure in a glass a brownish cloud appeared at the upper part which slowly and progressively invaded the whole mass. Fehling's solution was reduced in the cold, perchloride of iron gave a faint blue, and Millon's reagent in the cold gave a lemon-yellow coloration, and on heating a brick-red precipitate.

Vincent Dickinson.

Management of enuresis (*'Arch. of Ped.,'* 1915, xxxii, *p.* 753).—**A. Newlin** gives the nurse in charge a chart with the hours of the day marked on the left-hand margin under the heading of the days of the week. If enuresis occur every two hours the child is placed on the chamber every hour. If the clothing is wet in between times the hour is noted. At night the child is put on the chamber hourly up to 11 p.m. thereafter every two hours. At the end of twenty-four hours there is a clear chart or one with several wet periods. The periods between the voluntary urinations are extended but the hours marked "wet" on the proceeding days' charts are always anticipated by placing the child on the chamber. By the end of a week enuresis ceases entirely between the hours of 11 p.m. and 6 a.m.

Christopher Rolleston.

Course and prognosis of pyelo-cystitis in infancy (*'Urol. and Cut. Review,'* 1916, xx, *p.* 245).—**C. G. Grulee.**—The onset is usually sudden, with a high rise of temperature and little else The fever is usually quite irregular. There is a marked tendency to rapid rises and falls. In the very early stages pus is not present in the urine, but a distinct bacilluria exists. Within 24-74 hours pus appears, and is usually present in very large amounts. In by far the greatest number of cases *B. coli* is the causal organism. Occasionally streptococci, and more often staphylococci, are found. Grulee thinks that the seriousness of pyelo-cystitis in infancy has been greatly underestimated, as it not infrequently leads to death, and has a marked tendency to repetition in a large number of cases.

J. D. Rolleston.

Bladder tumours in the young (*'Boston Med. and Surg. Journ.,'* 1915, clxxiii, *p.* 873).—**R. F. O'Neil.**—Vesical tumours in children are very rare. The great majority appear before the fifth year. They are of the connective tissue type, and with rare exceptions are clinically and pathologically malignant. Difficulties in micturition are usually the first symptoms. Straining is common. Early diagnosis and operation offer the only hope of recovery. O'Neil reviews the literature and records some personal cases in young adults.

J. D. Rolleston.

Sarcoma of the prostate in a boy aged 4½ years (*'Arch. de méd. des auf.,'* 1915, XVIII, *p.* 598).—**B. de Saussine, G. Bertrand,** and **H. Androtsellis.**—The course of the disease was insidious at first, being characterised by some difficulty in micturition and pollakiuria, followed by colicky pain in the hypogastrium. About a fortnight after the onset complete retention developed. Ascending infection of the urinary passages ensued owing to repeated catheterisation and death took place. The autopsy showed a tumour the size of a mandarin orange surrounding the prostatic urethra, purulent cystitis, and a slight degree of pyelonephritis. On microscopical examination the tumour was found to be a fibro-sarcoma with myxomatas degeneration in places. J. D. ROLLESTON.

An unusual case of epididymo-orchitis in an infant (*'Arch. of Ped.,'* 1915, XXXII, *p.* 846).—**A. G. Mitchell** and **N. J. Quinn** record a case in an infant, aged 3 months. On December 27th its left testis and epididymis were found to be enlarged and tender. Temperature, 100 to 103° F. With the application of cold the inflammation subsided and the temperature fell to normal in five days. On January 8 there was a purulent urethral discharge, examination of which showed numerous Gram-negative diplococci, both intra- and extra-cellular. The discharge lasted several days. No history of infection could be obtained. Of 132 cases of gonorrhœa in male children reported since 1910 only three had epididymitis. With the exception of Reinhardt's case, aged 3 weeks, this is the youngest case on record (*Vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1916, XIII, *p.* 23). J. D. ROLLESTON.

Imperforate hymen in a baby (*'Lancet,'* 1916, I, *p.* 823).—**H. R. Spencer.**—A baby girl, aged 11 weeks, was brought to hospital on account of a swelling in the vulva which the mother had first noticed a fortnight previously. On inspection the labia were separated by a cystic swelling of the size of a small marble which became a little more prominent when the infant cried. It was obviously the imperforate hymen. Its most prominent part was seized with mouse-tooth forceps and an elliptical piece was snipped out; about a drachm of mucus escaped from the vagina and the hymen sank back to its normal position. A thin strand of oiled gauze was inserted into the hymeneal opening for a few days. A fortnight later the part had a normal appearance. The mother was instructed to bring the baby to the clinic from time to time in order to make sure that the aperture did not close. The author urges practisers of midwifery to make a routine inspection of the vulva of female babies before the puerperal attendance ceases. If the hymen is found to be imperforate and bulged forwards by secretion, a snip with a pair of scissors will save the patient from a grave risk to her fertility, health, and even life. J. ALLAN.

The prognosis of infantile vulvo-vaginitis (*'Dermat. Wochenschr.,'* 1915, LXI, *p.* 1077).—**P. Pontoppidan** inquired into the subsequent history of seventy-nine children who had been discharged from two Copenhagen hospitals after vulvo-vaginitis. Seventeen of these he examined personally, and in none was any gonorrhœa present. As regards the remaining sixty-two the mothers were so certain that the children were cured that they refused examination. The disease lasts as a rule for several months, sometimes with exacerbations and remissions for several years. The result, however, appears to be recovery in every case. There is no reason to suppose that the disease ever lasts until adult life. J. D. ROLLESTON.

A case of pregnancy diagnosed by radiography (*'Paris Méd.,'* 1917, VII, *p.* 314).—**E. Albert-Weil.**—A somewhat backward girl, aged 15 years, was brought to hospital because her mother had found that she had not been menstruating for four months. The abdomen was slightly increased in size, but the breasts were not much developed, and neither the fœtal heart nor the uterine souffle could be heard. The hymen was intact. The X rays showed that the pelvis was not completely ossified. A fœtal head was plainly visible above the sacrum and above it a series of rings indicating the vertebral column. The diagnosis of pregnancy was therefore undoubted, although the penis had not penetrated into the vagina.

J. D. ROLLESTON.

Reviews.

THE DECLINING BIRTH-RATE: ITS CAUSES AND EFFECTS. 1916. London Chapman & Hall, Ltd. Pp. 450. Price 10s. 6d. net.

The Commission to inquire into the national birth-rate, which was instituted by the National Council of Public Morals, commenced its sittings in October, 1913. It has now issued in book-form the report on its labours, which extended over a period of two and a half years. In addition to the general report and an addendum to the same, the chief part of the evidence given before the Commission is also included.

The extent of the Commission's investigations is indicated by the number and diversity of the witnesses examined, among whom we may mention Dr. Drysdale, Secretary of the Malthusian League, Sir Francis Champneys, Dr. Jordan, of California, Dr. Ballantyne, Mr. Berry, of the L.C.C., Dr. Dunlop (Scotland), Mrs. Burgwin, Dr. Amand Routh, Dr. Mary Scharlieb, Dr. Reid (M.O.H., Staffordshire), Sir Thomas Oliver, Dr. Major Greenwood, Dr. Chalmers (M.O.H., Glasgow), and Dr. Stevenson, of the General Register Office. These and others dealt with the subject from the social and physiological standpoints. The moral and religious aspects of the problem were further discussed by the Rev. W. F. Lofthouse, Secretary of the Wesleyan Methodist Union, the Right Rev. Monsignor W. F. Brown, the Chief Rabbi, and the Bishop of Southwark.

The conclusions which the Commission considers to be definitely established are: (1) that the birth-rate has declined to the extent of approximately one-third within the last thirty-five years; (2) that the decline is not, to any important extent, due to alterations in the marriage-rate, or to other causes diminishing the proportion of married women of fertile age in the population; (3) that this decline, although general, has not been uniformly distributed over all sections of the community; (4) that on the whole the decline has been more marked in the more prosperous classes; (5) that the greater incidence of infant mortality upon the less prosperous classes does not reduce their effective fertility to the level of that of the wealthier classes; (6) conscious limitation of fertility is widely practised among the middle and upper classes, and there is good reason to think that, in addition to other means of limitation, the illegal induction of abortion frequently occurs among the industrial population; (7) there is no reason to believe that the higher education of women (whatever its indirect results upon the birth-rate may be) has any important effect in diminishing their physiological aptitude

to bear children. Thus far the Commission goes, but no further. The important question of venereal diseases, upon which so much depends, is but lightly touched upon in view of the facts that a Royal Commission had been appointed to investigate this subject, and that no trustworthy material of a statistical nature was within the Commission's reach.

Among the suggestions put forward to remedy the decline in birth-rate are: (1) the establishment of a minimum or "living" wage; (2) State bonuses for families with small incomes; (3) the separate assessment of the husband's and wife's incomes, and a remission of the tax on incomes below £600 per annum for each child; (4) improved housing accommodation and better facilities for land-tenure; (5) the prohibition of the sale of diachylon and of mechanical and chemical preventives of conception.

It will thus be seen that the work accomplished by the Commission is of considerable importance. The future welfare of the race and the protection of the rising generation are among the chief topics of the day. The report is issued at an opportune moment, and will, it is to be hoped, bear good fruit. T. R. W.

THE MORTALITY FROM CANCER THROUGHOUT THE WORLD. By FREDERICK L. HOFFMAN, LL.D., F.S.S., F.A.S.A. Newark, New Jersey: The Prudential Press, 1915. Pp. 826 + xv.

DR. HOFFMAN, the statistician to the Prudential Insurance Company of America, has collected from all parts of the world a vast amount of detail concerning the distribution and mortality of cancer, and has embodied it in this book, which will be invaluable as a work of reference to all who are interested in the statistics of the subject, whether from a scientific or an insurance point of view. The cancer question is dealt with, it may be fairly said, from every conceivable aspect as regards statistics, and the wealth of information here presented may be gauged by the fact that the charts and tables alone occupy some 550 pages.

The book opens with an outline of the general principles of statistical inquiry and of the methods pursued in the investigation of the cancer problem, which the author admits are in need of standardisation and still further extension. The information at present available, however, is sufficient to warrant the conclusion that "cancer is increasing at a more or less alarming rate throughout the entire civilised world"; and from the statistics of occupations it appears that an exceptional cancer frequency occurs in certain particular employments. The evidence afforded by the returns of life insurance companies throughout the world further supports the conclusion that cancer mortality is on the increase among policy holders, medically selected, as well as among the population at large. At the same time, they show that overweight, and not underweight, has an influence on the death-rate from malignant disease, that the marital or conjugal condition exerts important modifications, and that heredity or family history is of little account.

The geographical incidence of cancer brings out the wide range in the cancer frequency rates of different countries and cities, the highest death-rate prevailing in Europe and the lowest on the continent of Africa. Cancer mortality is exceptionally high in Switzerland, Bavaria, and Holland, and is extremely rare among the North American Indians and the primitive races of Asia and Africa. It is found that practically all forms of cancer are on the increase, but naturally to quite a variable degree.

The returns for the American states and cities are presented in detail, together with the corresponding data for other countries. These seemingly point to the fact that cancer frequency decreases with diminishing distances from the Equator; in other words, a rise in cancer mortality is observed to occur with a diminishing mean annual temperature and rainfall.

The question of the parasitical origin, and consequently the possible infectiousness of the disease, is considered at some length, with special reference to cancer houses and districts. The evidence as regards the possibility of such an origin is held to be inconclusive, an opinion which is borne out by the fact that there is no record of infection being acquired by surgeons operating upon cancerous patients.

Radium and radio-therapy are likewise referred to, and the conclusion arrived at is that in external cancers the outlook of this form of treatment is encouraging, but that as regards internal growths the evidence at present is quite contradictory and inconclusive.

The author states that the mortality from malignant disease throughout the civilised world exceeds 500,000 per annum, and that to prevent an even higher death-rate the disease should be subject to more effective methods of treatment and control. To attain this end the imperative necessity of early surgical and possibly other interference must be urgently insisted upon, and the scope of statistical research be still further extended.

It is only possible to give here a bare outline of the ground covered by this book. The labour and care expended upon its production must have been stupendous. The bibliography of the more important works and articles consulted extends to 19 pages, and the list of authors quoted contains 323 names. The book is distributed gratuitously by the Prudential Insurance Company of America to medical libraries, members of the medical profession, and to all others specially interested in the cancer cause and the problem of cancer control. T. R. W.

Pulmonary Tuberculosis in General Practice. By Halliday G. Sutherland, M.D.Edin. 8vo, pp. xvi × 290, with 6 plates, 42 figures in the text, and 9 charts. London: Cassell & Co., 1916. Price 10s. 6d. net.

Dr. Sutherland, who is Consulting Tuberculosis Officer for North Marylebone, and Medical Officer to the Marylebone Tuberculosis Dispensary, has written this book for the benefit of the general practitioner. It sets out to put before him the modern conception of pulmonary tuberculosis as a systemic disease, localised in the lungs perhaps, but reacting upon all the tissues of the body. The author is a pupil of Sir Robert Philip, and his pages reflect the teachings of the Edinburgh school. An adequate but short account of the pathology of tuberculous infection is given, while great care is devoted to an exposition of the symptoms, signs, diagnosis, and treatment of pulmonary tuberculosis; pleurisy and hæmoptysis each receive a special chapter. Dr. Sutherland is a believer in the utility of tuberculin for the diagnosis and treatment of the disease, so long as its employment remains in suitable hands and is confined to suitable cases. No special account of pulmonary tuberculosis in infants or children is given, although the subject is referred to at some length in the first chapter and also elsewhere in the volume. Dr. Sutherland's style is brief and lucid; he gives plenty of practical directions and recipes such as the general practitioner requires. The book is

well illustrated and well printed; it may be recommended to the attention of all medical men and students who are in want of a sound account of the subject. A. J. J.-B.

THE TREATMENT OF INFANTILE PARALYSIS. By ROBERT W. LOVETT, M.D., Professor of Orthopædic Surgery, Harvard Medical School, Surgeon to the Children's Hospital, Boston, etc. London: W. Heinemann 1916. Pp. 163 + ix, with 113 Illustrations. Price 8s. 6d. net.

WE cordially welcome this book by Dr. R. W. Lovett, of Boston, who is well known as an authority and writer on infantile paralysis. As the title indicates, its object is to set forth the modern methods of treating the disease in question. Progress in this direction has of recent years been so rapid that a book of this sort is urgently called for, and we congratulate the author on his eminently practical exposition of the various therapeutic measures which should be employed. The book, moreover, has a valuable asset in that throughout its pages it bears the stamp of the author's individuality and reflects the outcome of his own personal observation and experience.

The opening pages are devoted to a chapter on the pathology, symptoms, mortality, diagnosis, and prognosis of the disease. From this it appears that the lesions recently found in American cases are more extensive than those usually met with in this country, for the author states that in the Vermont outbreak "abdominal paralysis existed in more than half of all the cases (seventy-nine), and affection of the muscles of the spine in more than a quarter (forty)."

In discussing the treatment the author divides the disease into three stages: (1) The acute; (2) the convalescent, which continues so long as spontaneous improvement is maintained (about two years); (3) the chronic, when the affection has become more stationary, and deformities, if present, have become established. In dealing with the acute stage Dr. Lovett emphasises the necessity for absolute rest, and utters a warning against massage and all other interference so long as any tenderness persists. Means, however, must be taken to prevent the onset of contractions and early deformity. During the second stage exercise in moderation is advocated, and here some useful hints are given as to the necessary boots and leg-supports. Electricity, in the author's experience, is not of much value as a therapeutic measure. It is, however, in the chapters dealing with the chronic phase that the writer's personality is chiefly in evidence. The various methods of treating deformities, both operative and otherwise, are set forth clearly and concisely, and the merits and demerits of the different operations are discussed judicially and with an open mind. The author indicates the methods of procedure which have yielded the best results in his own practice, and herein lies, as we have already stated, one of the great merits of this book.

A feature in the treatment of the chronic stage, upon which Dr. Lovett lays stress, is the training of muscles, and to this a special chapter is devoted. Details are given of exercises for every group of muscles that is liable to be affected, and of the necessary position of the limb or body for such to have the best effect. Finally, instructions are given for muscle testing by means of the spring-balance. In this way the strength of the various muscles can be accurately gauged and a record kept of improvement or the reverse.

The book is well got up and is excellently illustrated with diagrams and numerous photographs of typical and remarkable cases. It should be studied not only by orthopædic surgeons, but by all whose practice brings them in contact with infantile paralysis. Such cases are apt to be too much neglected, but a perusal of this book will reveal the many possibilities of treatment. T. R. W.

Surgical Contributions for 1881–1916. By Rutherford Morison, M.B., F.R.C.S. Price 42s. net. Vol. I, General Surgery, 15s. net; Vol. II, Abdominal Surgery, 30s. net. 1916. Bristol: John Wright & Sons.

The practice of many physicians and surgeons of publishing collections of clinical lectures and essays upon various medical and surgical subjects is one that appears to be becoming more common, and we notice this tendency with some misgiving. In our opinion all medical books should have some definite purpose in view. They should be written with the object of assisting fellow practitioners, or with a view to teaching students, or in order to popularise some new surgical procedure. The practice of simply collecting a number of essays and lectures on totally different subjects and publishing them as a book does not commend itself to us. The reader is left to hunt through the book to obtain the information he wants, whereas this should have been done for him by the author. Moreover, experiences of many years ago are of but little practical value at the present day.

In this book Mr. Rutherford Morison has collected practically all that he has written since he has been in surgical practice. Many of the cases recounted, many of the lectures and short essays given are of considerable interest, and Mr. Rutherford Morison has a trenchant style which often drives a point home with pleasing emphasis. This makes us all the more regret that such a large mass of heterogeneous material should have been bundled together in these two volumes, for we cannot help feeling that if Mr. Rutherford Morison had written a book on general surgery, having some definite object, such as the teaching of students or the assisting of other surgeons, it would have been of real value as a modern text-book, which these two volumes can hardly claim to be.

These two volumes contain such varied matter as Impressions of American Hospitals; Notes of Seventeen Cases of Vesical Calculi, 1885; The Prevention and Treatment of Puerperal Sepsis; Diagnosis and Treatment of Breast Cancer; Notes of a Visit to Prof. Rutherford Morison's Clinic; a photograph of all Mr. Rutherford Morison's House Surgeons. We fail to see what possible interest there can be to the reader in a list of specimens added to the Pathological Museum in 1903; or why the review of a book by Mr. Mayo Robson and Sir Berkeley Moynihan in 1902 should be included. The two volumes are well got up; they are on good paper and nicely bound, and the illustrations are well done.

The Hope of the Future: The Management of Children in Health and Disease. By Dr. Mary Scharlieb. London: Chapman & Hall, Ltd. 1916. Pp. 261 + x. Price 6s. net.

Another handbook for nurses and mothers has appeared—this time from the pen of Dr. Mary Scharlieb. Considering the reputation of the authoress we are disappointed in what she has given to us, not that the

book is lacking in useful information or unsuited for its purpose. Much of it is good, and, indeed, the chapters on "Puberty and Adolescence" and on the "Nervous Difficulties of Adolescence" are written with a true insight and should prove of great assistance to parents who really try to understand their children.

The book begins with a brief outline of the anatomy, physiology, and life of early childhood, to which less than fifty pages are devoted. The rest is practically an elementary text-book on medicine so far as it concerns the child, and here some inequalities appear with regard to the importance attached to some subjects and the exclusion of others. The book is avowedly written for English mothers, but we find accounts of typhus fever and plague to the exclusion of diseases of the newborn and of birth palsies. Malta and dengue fevers are described, but not torticollis or laryngismus stridulus; dysentery, but not disorders of speech. Mention is made of malaria and yellow fever, but not of the thyroid gland and its diseases. Scabies is referred to, but not pediculosis. A good deal of space, comparatively speaking, is devoted to gastric and duodenal ulcers, but there is no account of jaundice, and the chapter on "Skin Diseases" contains no reference to purpura or nettle-rash.

Moreover, the book is marred by frequent looseness in the writing and by numerous mistakes. We do not like the constantly recurring phrase, "The best cure is prevention," and cannot condone "eclamptic convulsions" or the word "anæmiating." Among the mistakes we may mention a reference on p. 8 to the fœtal circulation, which contains the expression, "the well-oxygenated blood from the lungs," and the omission of the palate being affected in diphtheritic paralysis; in the latter connection also we should like to draw Dr. Scharlieb's attention to the fact that antidiphtheritic serum is not a vaccine. On p. 102 an Italian nationality is conferred upon Laveran, together with a change of name to Lavarani. We have heard of such a thing in the case of singers, but never before with regard to a scientist. On pp. 50 and 86 there are some curious remarks concerning the infectivity of the desquamated particles in measles and scarlet fever. In the chapter on "Rheumatism and Heart Disease," in the course of five pages we come across the following: "Rheumatism, as it occurs in children, is nearly always acute rheumatism, or milder attacks—usually called sub-acute rheumatism"; "in many cases, which are so mild as to pass almost unnoticed"; "Rheumatic Fever, although it is called Acute Rheumatism, is by no means a rapid illness; the raised temperature and other symptoms of illness run a perfectly indefinite course and last for weeks"; "the great stand-by in such cases being salicylate of sodium"; "the most important item in the treatment of acute rheumatism is no drug nor other obviously medical remedy (*sic*), but absolute and complete rest"; "the beginning and end of the treatment of acute rheumatism, and of all conditions allied to it, is rest of mind and body"; and with reference to heart disease, "Towards the end of the child's life there is frequently dropsy and also œdematous swelling of the feet and legs towards evening and of the eyelids and face in the morning." What definite ideas a lay person will gather from the above quotations it is difficult to say.

At the end there is an appendix containing eighteen formulæ, and a somewhat inadequate index.

The book requires careful revision and correction before it can take the place to which, apart from its inequalities and errors, it is otherwise entitled. T. R. W.

Clinical Methods: A Guide to the Practical Study of Medicine. By Robert Hutchison, M.D., F.R.C.P., and Harry Rainy, M.D., F.R.C P. Edin., F.R.S.E. Sixth Edition. Revised throughout. London: Cassell & Co., 1916. Price 10s. 6d. net.

More than four years have passed since the last edition of this excellent manual (*vide* British Journal of Children's Diseases, 1912, ix, p. 524), though three reprints have been called for in the interval.

The principal changes in the present edition are those in the chapter on clinical bacteriology. The method of taking material for the preparation of vaccines has been described, and new matter has been added regarding various micro-organisms, especially the paratyphoid group, *B. dysenteriæ*, *B. tetani*, *micrococcus rheumaticus*, *diplococcus intracellularis*, and the organisms of Vincent's angina.

The chapter on the circulatory system contains a brief summary of the results of modern methods of examination of the myocardium.

J. D. R.

The Eyes of our Children. By N. Bishop Harman, M.A., M.B.Cantab., F.R.C.S.Eng. London: Methuen & Co., Ltd. Price 1s. net.

This little book is one of Methuen's Health Series, the purpose of which is to place before lay readers in simple and non-technical language much practical and useful information regarding their health. Mr. Bishop Harman has an important subject to write on, and he discusses various points in a most satisfactory manner. The book deals with the eyes of the child, their common defects, and the best means of safe-guarding their use at school and at home. The careful perusal of this small volume would not only bring under notice the great value of good eyesight, but would also strongly emphasise the importance of the conservation of vision for future generations. We can with confidence recommend the book to all interested in the welfare of child life.

J. A.

Studies in Medicine: University of Iowa Monographs. Vol. i, No. 1, June, 1916. Price $·40.

We welcome the first appearance of these collected papers, which, though previously published, are not all from very accessible sources. Of the present instalment of ten papers the first is from the Editor, Prof. Henry Albert, on chordoma, a rare form of tumour derived from the remains of the notocord. Out of the 16 cases collected, 10 arose from the sphenoccipital synchondrosis and 6 from the sacro-coccygeal region, and 10 were clinically malignant and 6 innocent. In a paper entitled "Strychnine, miscalled Stimulant; an Example of a Dangerous Misuse of Words," Chase and Schlomovitz insist that this drug sensitises the nervous centres, and if given alone may enable toxins to act more readily and so does harm, unless it be combined with some real stimulant such as atropine or caffein. There are two papers by C. E. Royce, one on the use of plaster of Paris in mounting gelatine preparations, and the other on tuberculosis of the ovary, which he concludes is never primary and occurs mainly by the blood-stream. A. L. Grover shows that alcohol, when given for long periods to animals,

produces hepatic cirrhosis, and in a further paper discusses the occurrence of spontaneous hepatic cirrhosis in animals, and finds that it is so comparatively infrequent as not to invalidate the results of experimental alcoholic intoxication. H. D. R.

THE ROCKEFELLER FOUNDATION INTERNATIONAL HEALTH COMMISSION. SECOND ANNUAL REPORT, JANUARY THE 1ST, 1915—DECEMBER THE 31ST, 1915. Offices of the Commission: 61, Broadway, New York, 1916.

UP to 1915 this Commission had devoted itself almost entirely to the relief and control of hookworm disease, but subsequently this work was extended and arrangements were made to deal in a similar manner with malaria and yellow fever, in addition to other activities.

The present report gives an interesting account of the measures taken against hookworm disease in the Southern United States, West Indies, Central America, and Egypt, as regards sanitary improvement, educational work, hospital work, and survey work.

Numerous instructive photographs illustrating uncinariasis are appended (*cf.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1916, xiii, p. 64).

J. D. R.

MANCHESTER BABIES' HOSPITAL: MEDICAL REGISTRAR'S ANNUAL REPORTS. August, 1915–July, 1916. Manchester University Press. Price 1*s.* net.

THE cases admitted were clearly of great severity, the majority of them showing a great loss of tolerance for food, and many of them, in addition, showing evidence of terminal infections—bronchitis, subcutaneous abscesses, and so forth. With such material uniformly good results are not to be expected, but there is ample evidence in the Reports that the care and nursing which have been bestowed upon these miserable children have not been without good effect. As to the value of publishing annually a volume which consists only of a collection of short clinical histories detailing the changes of diet, the medicines ordered, and the varying symptoms, we are in some doubt. These statistics can, in the nature of things, be of use and of interest only to those who have seen and studied the children in life. No attempt is made to divide the cases into clinical groups, but each is treated as a separate study. Nor is there any grouping or division according to the kind of diet which proved successful. There is not indication that modification of diet has been used upon any plan or others than haphazard. H. C. C.

EDUCATION IN VICTORIA: REPORT OF THE MINISTER OF PUBLIC INSTRUCTION FOR THE YEAR 1914–15. 1915. By authority. A. J. Mullett, Melbourne. 4to. Pp. 112.

THIS report is of a similar nature to those issued for previous years. It contains details of the working and administration of the various schools in the province of Victoria and several appendices or supplementary reports.

We note that mention is again made of the occurrence of goitre, which appears to be endemic in certain localities, and to be bacterial in origin rather than due to the drinking water. Enlargement of the thyroid gland was found in young children of both sexes as well as in older members of families and in parents.

A new series of intelligence tests, devised by S. D. Porteus, is perhaps the most important feature of the report from a clinical point of view. These are used like the Binet-Simon tests and consist for the most part of increasingly complicated mazes. Illustrations of the tests and a description of the way in which they should be employed are given.

T. R. W.

Correspondence.

To the Editor of The British Journal of Children's Diseases.

STANDING JOINT COMMITTEE OF INDUSTRIAL WOMEN'S ORGANISATIONS.

Dear Sir,—I beg to enclose the following resolutions which were passed at a meeting of the Standing Joint Committee of Industrial Women's Organisations on June the 5th, and hope that you will find room for them in your valuable paper:

"Resolution.

"That the Standing Joint Committee of Industrial Women's Organisations, believing that national measures are necessary to meet adequately the needs of maternity and infancy, ventures to ask the Committee responsible for 'Baby Week' to consider the possibility of bringing forward the following proposals at the meetings arranged during the week:

"1. That it be made compulsory on Public Health Authorities (*a*) to establish Maternity Committees; (*b*) to adopt a scheme suitable to their locality, making adequate provision for the health of mothers (including treatment as well as advice), before, at, and after confinement, and for children up to school age.

"2. That the powers of Local Health Authorities should be extended so as to enable them to provide dinners and milk for mothers and young children and any other developments deemed desirable in the interests of maternity and sanctioned by the Local Government Board.

"3. That steps should be taken to enable Local Health Authorities to supply pure milk at a cost within the reach of all classes.

"4. That a Ministry of Health based on the Public Health work of the Local Government Board, with a Maternity Department partly staffed by women, should be immediately created."

Yours faithfully,

Mary E. Coates,
Secretary.

1, Victoria Street, London, S.W. 1;
June the 8th, 1917.